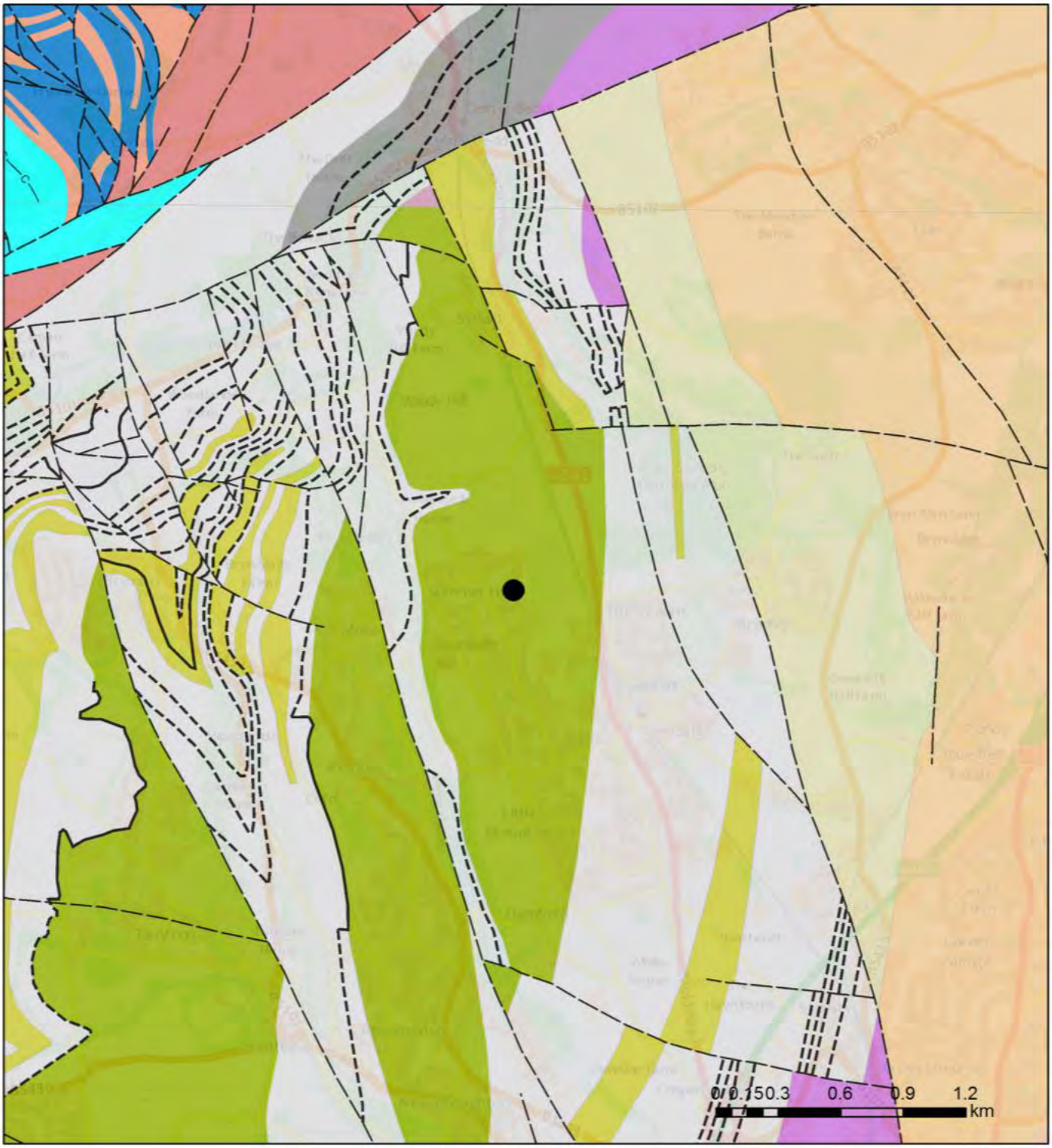
**Appendix D – Environmental Maps**

**Geological Maps**

**Bedrock Geology**



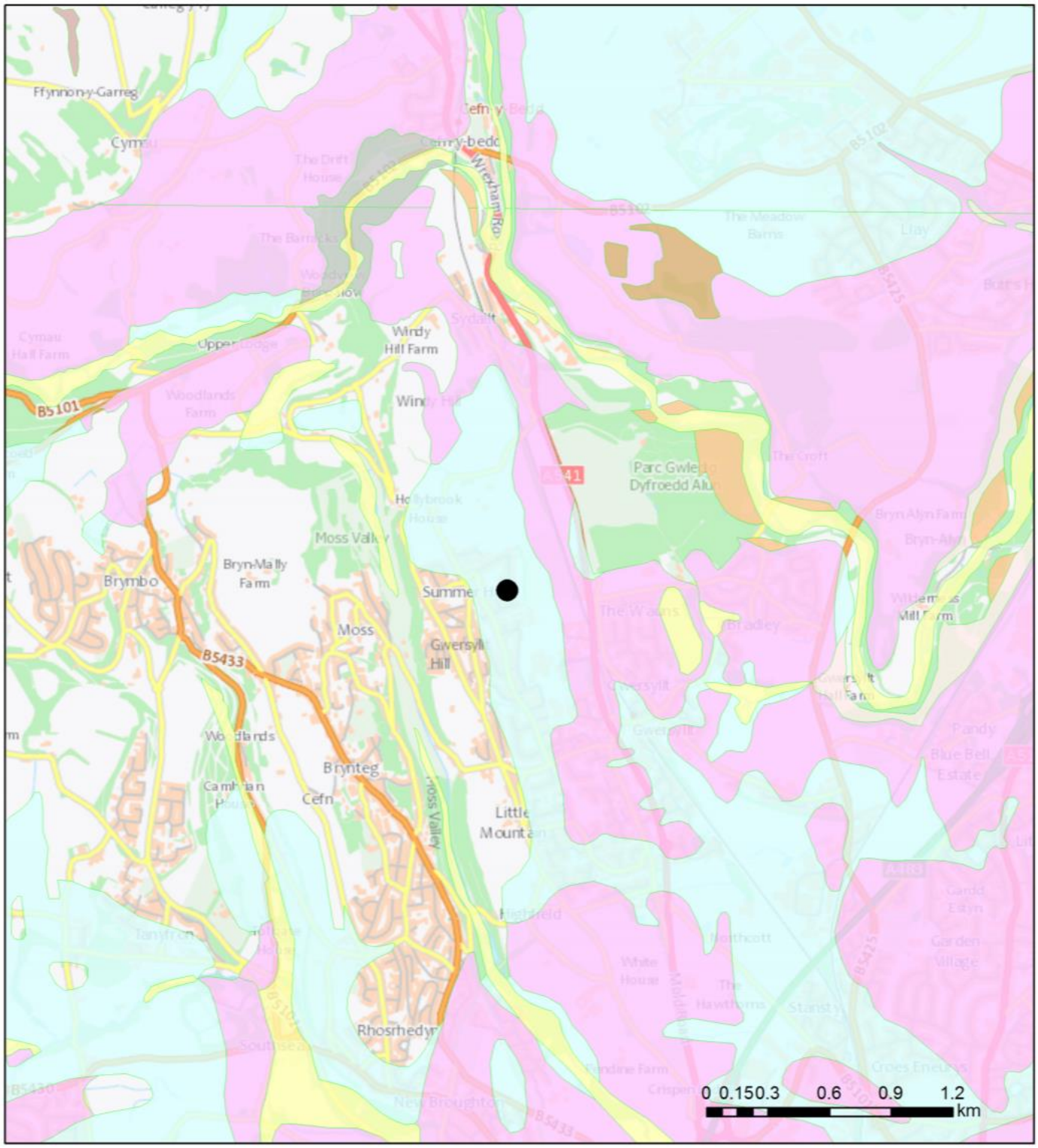

**Linear features 1:50,000 scale**

- Coal_seam_Inf
- Coal_seam_Obs
- Coral_band
- Mineral_Vein_Inf

**Bedrock geology 1:50,000 scale**

- CEFN MAWR LIMESTONE FORMATION - LIMESTONE AND [SUBEQUAL/SUBORDINATE] ARGILLACEOUS ROCKS, INTERBEDDED
- PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE
- ETRURIA FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE
- LOGGERHEADS LIMESTONE FORMATION - LIMESTONE
- MINERA FORMATION - LIMESTONE AND [SUBEQUAL/SUBORDINATE] SANDSTONE, INTERBEDDED
- HALESOWEN FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE
- ARDEN SANDSTONE FORMATION - MUDSTONE
- GWESPYR SANDSTONE - SANDSTONE AND [SUBEQUAL/SUBORDINATE] ARGILLACEOUS ROCKS, INTERBEDDED
- SALOP FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE
- KINNERTON SANDSTONE FORMATION - SANDSTONE
- PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE
- MINERA FORMATION - SANDSTONE
- CEFN-Y-FEDW SANDSTONE FORMATION - SANDSTONE AND [SUBEQUAL/SUBORDINATE] ARGILLACEOUS ROCKS, INTERBEDDED
- BOWLAND SHALE FORMATION - MUDSTONE
- PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE
- CEFN-Y-FEDW SANDSTONE FORMATION - CHERT
- CEFN ROCK - SANDSTONE

# Superficial Geology




**Superficial deposits 1:50,000 scale**

- GLACIOFLUVIAL DEPOSITS, DEVENSIAN - SAND AND GRAVEL
- TILL, DEVENSIAN - DIAMICTON
- GLACIOLACUSTRINE DEPOSITS, DEVENSIAN - CLAY AND SILT
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- HEAD - CLAY, SILT, SAND AND GRAVEL
- RIVER TERRACE DEPOSITS (UNDIFFERENTIATED) - SAND AND GRAVEL
- LACUSTRINE DEPOSITS - CLAY AND SILT
- PEAT - PEAT
- SUPERFICIAL DEPOSITS - SEDIMENT

**BGS Borehole Logs**

**SJ35SW765**

SUB SOIL SURVEYS LTD. MANCHESTER SJ 35 SW 765

BOREHOLE No. 3

Ref:

# EXPLORATORY BORING RECORD

SITE Wrexham Site Ref: 85/30

Boring Method Light Cable Percussion Ground Level O.D.

| Date | Depth of Casing Below G.L. (m) | Water Level Morning & Evening | Depth of Strata Below G.L. | STRATA APPROX. SCALE 1:50 | No. of Samp | Type of Samp | Penetration of Sampler or Core Barrel (metres) From | To | No. of Blows | Core Recovery |
|---|---|---|---|---|---|---|---|---|---|---|
| 19.2.85 | | | 0.2 | Topsoil | | | | | | |
| | | | 0.8 | Soft to firm brown CLAY with stone incls. and soily zones | 1 | D | 0.5 | | | |
| | | | 1.0 | Brown claybound SAND AND GRAVEL | 2 | X | 1.05 | 1.35 | 19 | |
| | | | 1.6 | Firm/stiff brown mottled CLAY with stone incls. and sandstone pieces | 3 | U | 1.5 | 1.95 | | |
| | | | 2.8 | Stiff brown and grey CLAY with stone and coal incls. | 4 | D | 2.0 | | | |
| | | | 3.0 | | 5 | U | 2.5 | 2.95 | | |
| | | | | Brown very sandy CLAY/clayey SAND with stone incls | 6 | D | 3.0 | | | |
| | | | | Very soft to firm light grey brown SANDSTONE - clay filled fissures | 7 | X | 3.15 | 3.45 | 61 | |
| | | | | | 8 | X | 4.15 | 4.38 | 116 | |
| | | | | | 9 | X | 5.0 | 5.1 | 68 | |
| 19.2.85 | 3.2 | | 5.2 | | | | | | | |

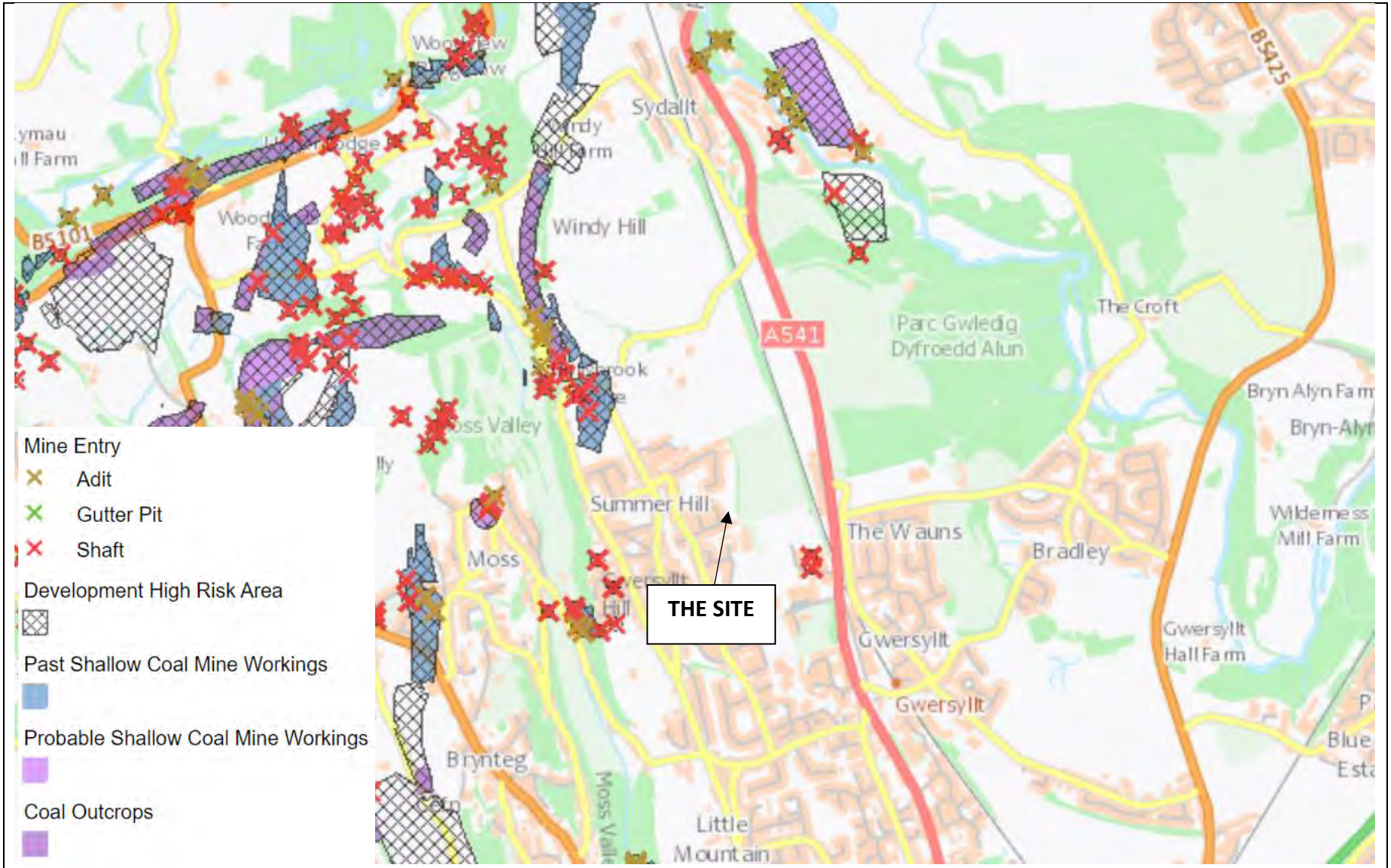
Samples shown thus: Disturbed D. Undisturbed U. Standard Pen. Test X. Water W. Bulk B.

| Water Observed at the Following Depths * – overnight seepage | Depth of Casing when Sealed (N.B. – Not Sealed) | Estimated Seepage | Water Added at Following Depths to Assist Boring | Water Level in Cased/Uncased Borehole on Completion: Date | Water Level | Depth of Casing |
|---|---|---|---|---|---|---|
| 1. Dry | | | | 19. 2.85 | Dry | Nil |
| 2. | | | | | | |
| 3. | | | | | | |
| 4. | | | DIA: OF CASING 150 m m. to depth of 3.2 metres | | | |
| 5. | | | m m. to depth of metres | | | |
| 6. | | | m m. to depth of metres | | | |

REMARKS:

Time spent chiselling - 1½ hours
No initial penetration for SPT sample No. 9

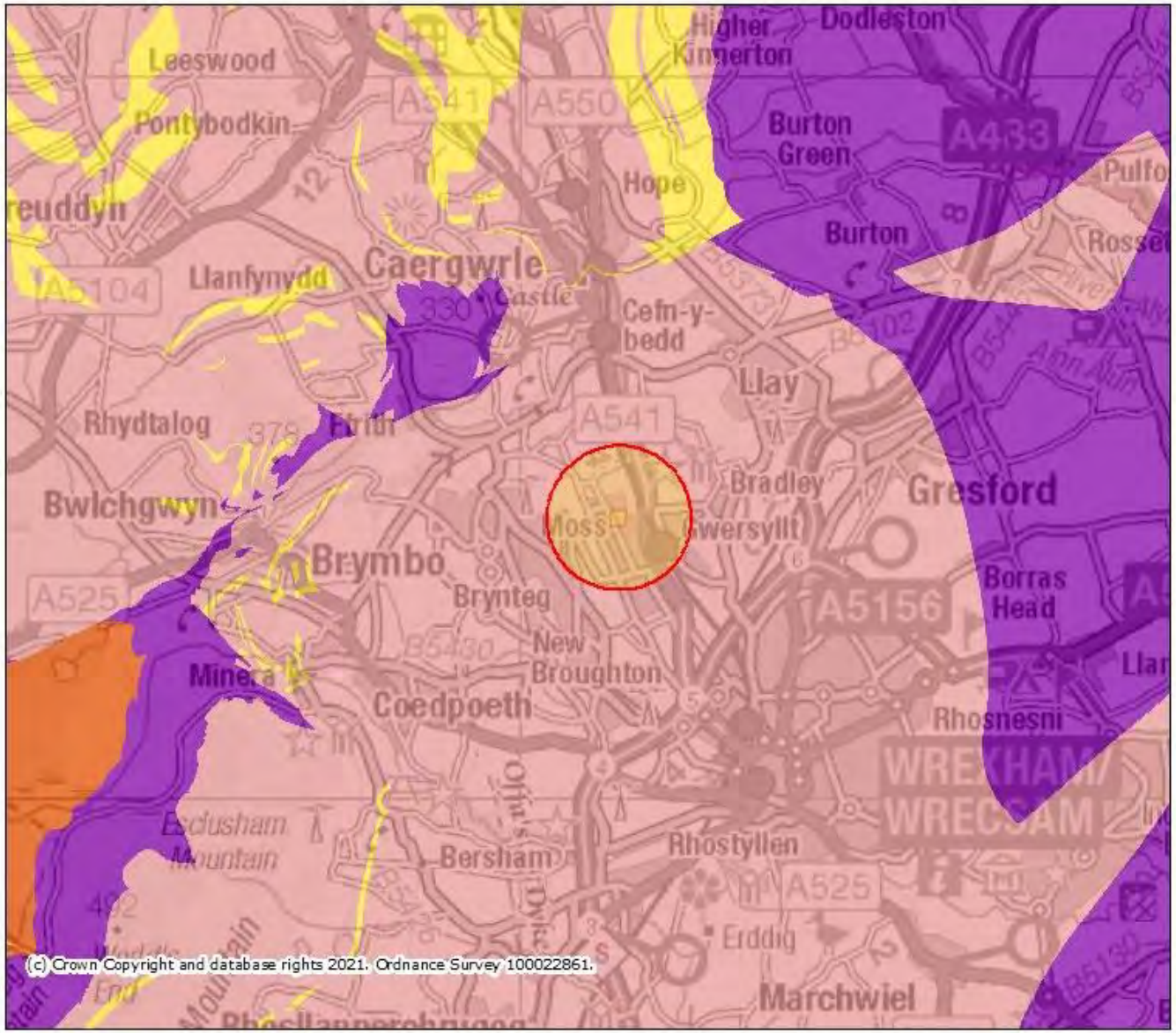
**Coal Mining Summary Map**




enviro | solution

MAGiC

# Bedrock Aquifer




## Legend

**Aquifer Designation Map (Bedrock) (England)**

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unproductive

Projection = OSGB36
xmin = 311800
ymin = 344800
xmax = 350100
ymax = 363100

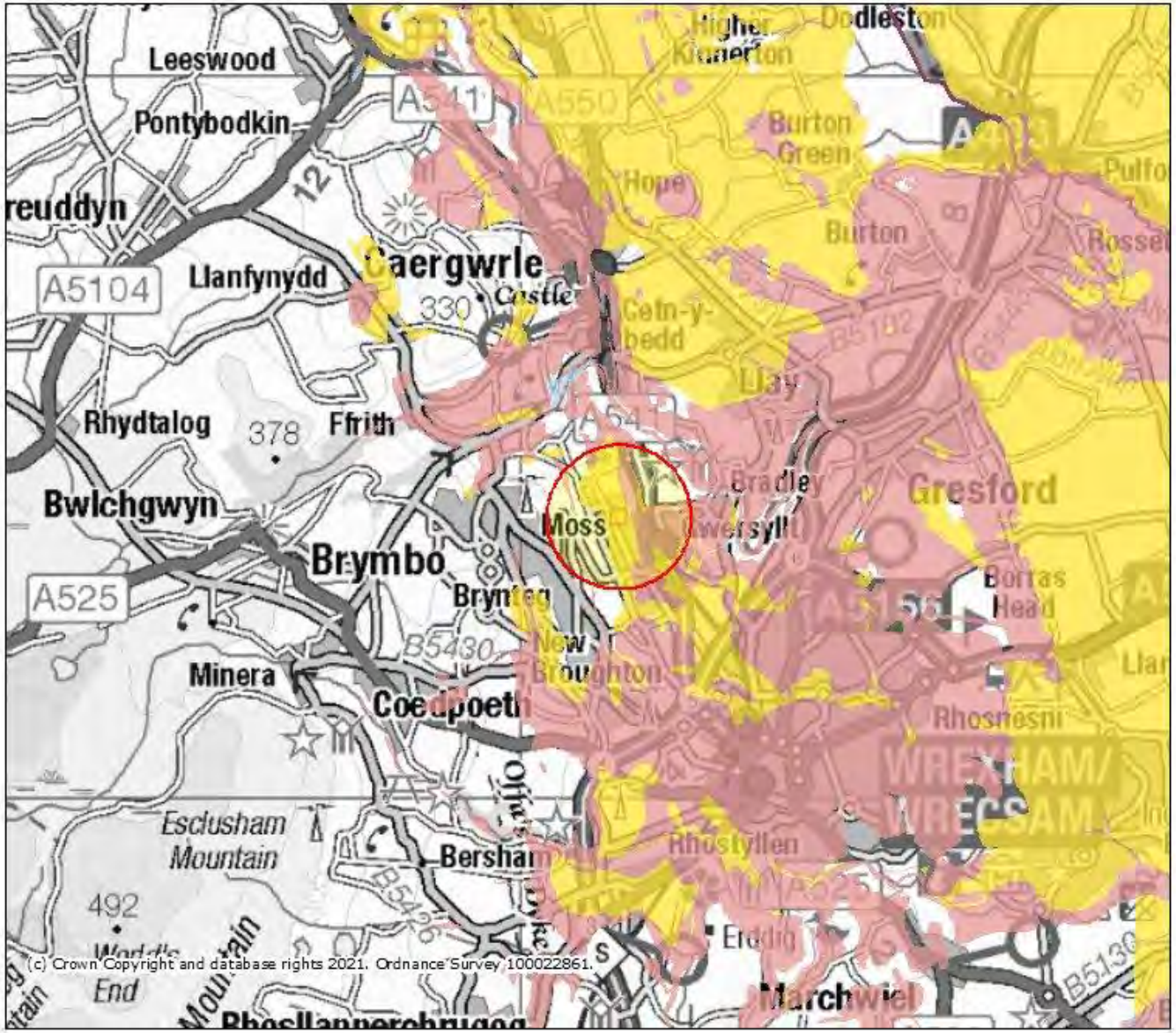
0 1.5 3
km

Map produced by MAGIC on 22 January, 2021.

Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

MAGiC

# Superficial Aquifer




## Legend

**Aquifer Designation Map (Superficial Drift) (England)**

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unknown (lakes+landslip)
- Unproductive

Projection = OSGB36
xmin = 311800
ymin = 344800
xmax = 350100
ymax = 363100

0 1.5 3
km

Map produced by MAGIC on 22 January, 2021.

Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

# Appendix E – Borehole Logs

| Job Title: Cedar Drive | Client: David Murray | **Borehole No: WS1** |
|---|---|---|
| Location: Cedar Drive, Wrexham | | **Page 1 of 3** |

| Drilling Dates: 10/02/21 | Drilling Method: Window Sampler |
|---|---|
| Drilling Contractor: EnviroSolution Ltd | Borehole Diameter: 87mm |
| Logged by: Tom Craig | Screen Type & Diameter: n/a |
| Checked by: Gemma Lucas | Screen Slot Size: n/a |

| Borehole Construction | Sample Number | Sample Type | Soil Vapour (ppm) | Groundwater | Depth (m) | SPT | Description | Comments | Depth (m) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | Grass on brown clayey TOPSOIL | | 0 |
| | 0.30m | ♦ | | | | | Brown sandy gravelly CLAY | | |
| | 0.80m | ♦ | | | | | Firm brown slightly gravelly CLAY | | |
| | | | | | 1 | 12 | Firm to stiff brown mottled slightly gravelly CLAY | | 1 |
| | 1.5m | ♦ | | | | | | | |
| | | | | | 2 | >50 | Very weak grey/ brown SANDSTONE | | 2 |
| | | | | | | | End of borehole at 2.1m | | |
| | | | | | 3 | | | | 3 |
| | | | | | 4 | | | | 4 |
| | | | | | 5 | | | | 5 |

| | |
|---|---|
| Non-slotted Install | Surrounded by bentonite seal, capped with flush cover and gas valve |
| Slotted Install | Surrounded by 10mm gravel and installed with end cap |

**Legend:**

♦ Disturbed Sample † Down Borehole Analysis

◡ Undisturbed Sample ∇ Groundwater Table

∅ Headspace Analysis ∆ Perched Water Table

| Job Title: Cedar Drive | Client: David Murray | **Borehole No: WS2** |
|---|---|---|
| Location: Cedar Drive | | **Page 2 of 3** |

| Drilling Dates: 10/02/21 | Drilling Method: Window Sampler |
|---|---|
| Drilling Contractor: EnviroSolution Ltd | Borehole Diameter: 87mm |
| Logged by: Tom Craig | Screen Type & Diameter: n/a |
| Checked by: Gemma Lucas | Screen Slot Size: n/a |

| Borehole Construction | Sample Number | Sample Type | Soil Vapour (ppm) | Groundwater | Depth (m) | SPT | Description | Comments | Depth (m) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | | | 0 |
| | | | | | | | Brown clayey TOPSOIL | | |
| | 0.30m | ♦ | | | | | Loose brown sandy fine to medium grained GRAVEL | | |
| | | | | | 1 | 4 | | | 1 |
| | 1.2m | ♦ | | | | | Firm to stiff brown sandy CLAY | | |
| | | | | | 2 | 17 | | | 2 |
| | | | | | | | Stiff brown CLAY | | |
| | | | | | | | Dark grey sandy GRAVEL | | |
| | | | | | | | Stiff brown slightly sandy CLAY | | |
| | 3.0m | ♦ | | | 3 | 50 | | | 3 |
| | | | | | | | Extremely weak weathered grey/ brown SANDSTONE | Only 0.20m recovery | |
| | | | | | 4 | >50 | | | 4 |
| | | | | | | | End of borehole at 4.0m | | |
| | | | | | 5 | | | | 5 |

| | |
|---|---|
| Non-slotted Install | Surrounded by bentonite seal, capped with flush cover and gas valve |
| Slotted Install | Surrounded by 10mm gravel and installed with end cap |

**Legend:**

♦ Disturbed Sample † Down Borehole Analysis

∪ Undisturbed Sample ∇ Groundwater Table

∅ Headspace Analysis ∆ Perched Water Table

| Job Title: Cedar Drive | Client: David Murray | **Borehole No: WS3** |
|---|---|---|
| Location: Cedar Drive, Wrexham | | **Page 3 of 3** |

| Drilling Dates: 10/02/21 | Drilling Method: Window Sampler |
|---|---|
| Drilling Contractor: EnviroSolution Ltd | Borehole Diameter: 87mm |
| Logged by: Tom Craig | Screen Type & Diameter: n/a |
| Checked by: Gemma Lucas | Screen Slot Size: n/a |

| Borehole Construction | Sample Number | Sample Type | Soil Vapour (ppm) | Groundwater | Depth (m) | SPT | Description | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | 0 | | | |
| | | | | | | | Brown clayey TOPSOIL | |
| | 0.30m | ♦ | | | | | Loose grey/ brown sandy GRAVEL | |
| | 0.50m | ♦ | | | | | Red medium grained SAND with occasional boulders | |
| | 1.0m | ♦ | | | 1 | 7 | | |
| | | | | | | | Firm grey/ brown slightly sandy CLAY | |
| | 2.0m | ♦ | | | 2 | 8 | | |
| | | | | | | | Stiff brown slightly gravelly CLAY | |
| | | | | | 3 | >50 | Very weak grey SANDSTONE | |
| | | | | | | | End of borehole at 3.0m | |
| | | | | | 4 | | | |
| | | | | | 5 | | | |

| | |
|---|---|
| Non-slotted Install | Surrounded by bentonite seal, capped with flush cover and gas valve |
| Slotted Install | Surrounded by 10mm gravel and installed with end cap |

**Legend:**

♦ Disturbed Sample † Down Borehole Analysis

◡ Undisturbed Sample ∇ Groundwater Table

∅ Headspace Analysis ∆ Perched Water Table

# Appendix F – Laboratory Certificates

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

# Final Report

| | |
|---|---|
| **Report No.:** | 21-04413-1 |
| **Initial Date of Issue:** | 18-Feb-2021 |
| **Client** | EnviroSolution |
| **Client Address:** | Suite 5, The Quay<br>No 12 Princes Dock<br>Liverpool Waters<br>Liverpool<br>L3 1DL |
| **Contact(s):** | Tom Craig |
| **Project** | Cedar Drive |
| **Quotation No.:** | |
| **Order No.:** | ES110221 |
| **No. of Samples:** | 5 |
| **Turnaround (Wkdays):** | 5 |
| **Date Approved:** | 18-Feb-2021 |
| **Approved By:** | |
| **Details:** | Glynn Harvey, Technical Manager |

| | |
|---|---|
| **Date Received:** | 12-Feb-2021 |
| **Date Instructed:** | 15-Feb-2021 |
| **Results Due:** | 19-Feb-2021 |

# Results - Soil

**Project: Cedar Drive**

| **Client: EnviroSolution** | | | **Chemtest Job No.:** | | 21-04413 | 21-04413 | 21-04413 | 21-04413 | 21-04413 |
|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | **Chemtest Sample ID.:** | | 1141465 | 1141466 | 1141467 | 1141468 | 1141469 |
| | | | Client Sample ID.: | | WS1 | WS1 | WS2 | WS2 | WS3 |
| | | | Sample Type: | | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | Top Depth (m): | | 0.30 | 0.80 | 0.30 | 1.20 | 0.30 |
| | | | Date Sampled: | | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 |
| | | | Asbestos Lab: | | COVENTRY | | COVENTRY | | COVENTRY |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | |
| ACM Type | U | 2192 | | N/A | - | | - | | - |
| Asbestos Identification | U | 2192 | | N/A | No Asbestos Detected | | No Asbestos Detected | | No Asbestos Detected |
| ACM Detection Stage | U | 2192 | | N/A | - | | - | | - |
| Moisture | N | 2030 | % | 0.020 | 12 | 13 | 12 | 12 | 13 |
| pH | U | 2010 | | 4.0 | 7.8 | 7.8 | 8.5 | 8.4 | 8.2 |
| Arsenic | U | 2450 | mg/kg | 1.0 | 12 | 9.4 | 8.0 | 7.0 | 11 |
| Cadmium | U | 2450 | mg/kg | 0.10 | 0.26 | 0.18 | 0.22 | 0.20 | 0.46 |
| Chromium | U | 2450 | mg/kg | 1.0 | 24 | 28 | 14 | 19 | 49 |
| Copper | U | 2450 | mg/kg | 0.50 | 46 | 31 | 20 | 44 | 66 |
| Mercury | U | 2450 | mg/kg | 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | 0.10 |
| Nickel | U | 2450 | mg/kg | 0.50 | 38 | 35 | 15 | 16 | 21 |
| Lead | U | 2450 | mg/kg | 0.50 | 42 | 42 | 60 | 39 | 89 |
| Selenium | U | 2450 | mg/kg | 0.20 | 0.53 | 0.27 | < 0.20 | 0.25 | 0.39 |
| Zinc | U | 2450 | mg/kg | 0.50 | 72 | 87 | 64 | 87 | 170 |
| Aliphatic TPH >C5-C6 | N | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C6-C8 | N | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C8-C10 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C10-C12 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C12-C16 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C16-C21 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C21-C35 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aliphatic TPH >C35-C44 | N | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Aliphatic Hydrocarbons | N | 2680 | mg/kg | 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Aromatic TPH >C5-C7 | N | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C7-C8 | N | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C8-C10 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C10-C12 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C12-C16 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C16-C21 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C21-C35 | U | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Aromatic TPH >C35-C44 | N | 2680 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Aromatic Hydrocarbons | N | 2680 | mg/kg | 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Total Petroleum Hydrocarbons | N | 2680 | mg/kg | 10.0 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Dichlorodifluoromethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloromethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl Chloride | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | U | 2760 | µg/kg | 20 | < 20 | < 20 | < 20 | < 20 | < 20 |
| Chloroethane | U | 2760 | µg/kg | 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |

# Results - Soil

**Project: Cedar Drive**

| **Client: EnviroSolution** | | | **Chemtest Job No.:** | | 21-04413 | 21-04413 | 21-04413 | 21-04413 | 21-04413 |
|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | **Chemtest Sample ID.:** | | 1141465 | 1141466 | 1141467 | 1141468 | 1141469 |
| | | | Client Sample ID.: | | WS1 | WS1 | WS2 | WS2 | WS3 |
| | | | Sample Type: | | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | Top Depth (m): | | 0.30 | 0.80 | 0.30 | 1.20 | 0.30 |
| | | | Date Sampled: | | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 |
| | | | Asbestos Lab: | | COVENTRY | | COVENTRY | | COVENTRY |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | |
| Trichlorofluoromethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | U | 2760 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans 1,2-Dichloroethene | U | 2760 | mg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| cis 1,2-Dichloroethene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromochloromethane | U | 2760 | µg/kg | 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Trichloromethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloromethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Benzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | U | 2760 | µg/kg | 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Trichloroethene | N | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | U | 2760 | µg/kg | 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| cis-1,3-Dichloropropene | N | 2760 | µg/kg | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Toluene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,3-Dichloropropene | N | 2760 | µg/kg | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,1,2-Trichloroethane | U | 2760 | µg/kg | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| Tetrachloroethene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | U | 2760 | µg/kg | 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Dibromochloromethane | U | 2760 | µg/kg | 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 1,2-Dibromoethane | U | 2760 | µg/kg | 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chlorobenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane | U | 2760 | µg/kg | 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Ethylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| m & p-Xylene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tribromomethane | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromobenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichloropropane | N | 2760 | µg/kg | 50 | < 50 | < 50 | < 50 | < 50 | < 50 |
| N-Propylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Chlorotoluene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Chlorotoluene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tert-Butylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

# Results - Soil

**Project: Cedar Drive**

| **Client: EnviroSolution** | | **Chemtest Job No.:** | | | 21-04413 | 21-04413 | 21-04413 | 21-04413 | 21-04413 |
|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | **Chemtest Sample ID.:** | | | 1141465 | 1141466 | 1141467 | 1141468 | 1141469 |
| | | Client Sample ID.: | | | WS1 | WS1 | WS2 | WS2 | WS3 |
| | | Sample Type: | | | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | Top Depth (m): | | | 0.30 | 0.80 | 0.30 | 1.20 | 0.30 |
| | | Date Sampled: | | | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 |
| | | Asbestos Lab: | | | COVENTRY | | COVENTRY | | COVENTRY |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | |
| 1,2,4-Trimethylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Sec-Butylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Isopropyltoluene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| N-Butylbenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-Chloropropane | U | 2760 | µg/kg | 50 | < 50 | < 50 | < 50 | < 50 | < 50 |
| 1,2,4-Trichlorobenzene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | U | 2760 | µg/kg | 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Methyl Tert-Butyl Ether | U | 2760 | µg/kg | 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| N-Nitrosodimethylamine | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Phenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Chlorophenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bis-(2-Chloroethyl)Ether | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 1,3-Dichlorobenzene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 1,4-Dichlorobenzene | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 1,2-Dichlorobenzene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Methylphenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bis(2-Chloroisopropyl)Ether | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Hexachloroethane | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| N-Nitrosodi-n-propylamine | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Methylphenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Nitrobenzene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Isophorone | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Nitrophenol | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2,4-Dimethylphenol | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bis(2-Chloroethoxy)Methane | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2,4-Dichlorophenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 1,2,4-Trichlorobenzene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Naphthalene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Chloroaniline | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Hexachlorobutadiene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Chloro-3-Methylphenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Methylnaphthalene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Nitrophenol | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Hexachlorocyclopentadiene | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2,4,6-Trichlorophenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |

# Results - Soil

**Project: Cedar Drive**

| **Client: EnviroSolution** | | | **Chemtest Job No.:** | | 21-04413 | 21-04413 | 21-04413 | 21-04413 | 21-04413 |
|---|---|---|---|---|---|---|---|---|---|
| Quotation No.: | | | **Chemtest Sample ID.:** | | 1141465 | 1141466 | 1141467 | 1141468 | 1141469 |
| | | | Client Sample ID.: | | WS1 | WS1 | WS2 | WS2 | WS3 |
| | | | Sample Type: | | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | Top Depth (m): | | 0.30 | 0.80 | 0.30 | 1.20 | 0.30 |
| | | | Date Sampled: | | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 | 10-Feb-2021 |
| | | | Asbestos Lab: | | COVENTRY | | COVENTRY | | COVENTRY |
| **Determinand** | **Accred.** | **SOP** | **Units** | **LOD** | | | | | |
| 2,4,5-Trichlorophenol | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Chloronaphthalene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Nitroaniline | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Acenaphthylene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Dimethylphthalate | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2,6-Dinitrotoluene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Acenaphthene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 3-Nitroaniline | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Dibenzofuran | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Chlorophenylphenylether | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2,4-Dinitrotoluene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Fluorene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Diethyl Phthalate | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Nitroaniline | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 2-Methyl-4,6-Dinitrophenol | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Azobenzene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| 4-Bromophenylphenyl Ether | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Hexachlorobenzene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Pentachlorophenol | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Phenanthrene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Anthracene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Carbazole | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Di-N-Butyl Phthalate | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Fluoranthene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Pyrene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Butylbenzyl Phthalate | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Benzo[a]anthracene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Chrysene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Bis(2-Ethylhexyl)Phthalate | N | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Di-N-Octyl Phthalate | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Benzo[b]fluoranthene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Benzo[k]fluoranthene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Benzo[a]pyrene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Indeno(1,2,3-c,d)Pyrene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Dibenz(a,h)Anthracene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |
| Benzo[g,h,i]perylene | U | 2790 | mg/kg | 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 | < 0.50 |

# Test Methods

| SOP | Title | Parameters included | Method summary |
|---|---|---|---|
| 2010 | pH Value of Soils | pH | pH Meter |
| 2030 | Moisture and Stone Content of Soils(Requirement of MCERTS) | Moisture content | Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C. |
| 2040 | Soil Description(Requirement of MCERTS) | Soil description | As received soil is described based upon BS5930 |
| 2192 | Asbestos | Asbestos | Polarised light microscopy / Gravimetry |
| 2450 | Acid Soluble Metals in Soils | Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc | Acid digestion followed by determination of metals in extract by ICP-MS. |
| 2680 | TPH A/A Split | Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44 | Dichloromethane extraction / GCxGC FID detection |
| 2760 | Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS | Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule | Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds. |
| 2790 | Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS | Semi-volatile organic compounds(cf. USEPA Method 8270) | Acetone/Hexane extraction / GC-MS |

## Report Information

**Key**

| | |
|---|---|
| U | UKAS accredited |
| M | MCERTS and UKAS accredited |
| N | Unaccredited |
| S | This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis |
| SN | This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis |
| T | This analysis has been subcontracted to an unaccredited laboratory |
| I/S | Insufficient Sample |
| U/S | Unsuitable Sample |
| N/E | not evaluated |
| < | "less than" |
| > | "greater than" |
| SOP | Standard operating procedure |
| LOD | Limit of detection |

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

**Sample Deviation Codes**

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

**Sample Retention and Disposal**

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Tom Craig
Envirosolution Ltd
Suite 5
The Quay
No. 12 Princes Dock
Liverpool Waters
Liverpool
L3 1DL

DETS Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

# DETS Report No: 21-01726

| | |
|---|---|
| Site Reference: | Cedar Drive |
| Project / Job Ref: | Cedar Drive |
| Order No: | ES110221 |
| Sample Receipt Date: | 15/02/2021 |
| Sample Scheduled Date: | 15/02/2021 |
| Report Issue Number: | 1 |
| Reporting Date: | 22/02/2021 |

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate | | | | | | |
|---|---|---|---|---|---|---|
| DETS Report No: 21-01726 | Date Sampled | None Supplied | None Supplied | | | |
| Envirosolution Ltd | Time Sampled | None Supplied | None Supplied | | | |
| Site Reference: Cedar Drive | TP / BH No | WS2 | WS3 | | | |
| Project / Job Ref: Cedar Drive | Additional Refs | None Supplied | None Supplied | | | |
| Order No: ES110221 | Depth (m) | 3.00 | 1.00 | | | |
| Reporting Date: 22/02/2021 | DETS Sample No | 525624 | 525625 | | | |

| Determinand | Unit | RL | Accreditation | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH | pH Units | N/a | MCERTS | 8.7 | 8.9 | | | |
| Total Sulphate as $SO_4$ | mg/kg | < 200 | MCERTS | 571 | 449 | | | |
| Total Sulphate as $SO_4$ | % | < 0.02 | MCERTS | 0.06 | 0.04 | | | |
| W/S Sulphate as $SO_4$ (2:1) | mg/l | < 10 | MCERTS | 243 | 54 | | | |
| W/S Sulphate as $SO_4$ (2:1) | g/l | < 0.01 | MCERTS | 0.24 | 0.05 | | | |
| Total Sulphur | % | < 0.02 | NONE | 0.05 | < 0.02 | | | |
| Ammonium as $NH_4$ | mg/kg | < 0.5 | NONE | 10.8 | 10 | | | |
| Ammonium as $NH_4$ | mg/l | < 0.05 | NONE | 1.08 | 1 | | | |
| W/S Chloride (2:1) | mg/kg | < 1 | MCERTS | 15 | 11 | | | |
| W/S Chloride (2:1) | mg/l | < 0.5 | MCERTS | 7.6 | 5.7 | | | |
| Water Soluble Nitrate (2:1) as $NO_3$ | mg/kg | < 3 | MCERTS | 9 | 13 | | | |
| Water Soluble Nitrate (2:1) as $NO_3$ | mg/l | < 1.5 | MCERTS | 4.5 | 6.4 | | | |
| W/S Magnesium | mg/l | < 0.1 | NONE | 2.3 | 1.1 | | | |

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Sample Descriptions |
|---|
| DETS Report No: 21-01726 |
| Envirosolution Ltd |
| Site Reference: Cedar Drive |
| Project / Job Ref: Cedar Drive |
| Order No: ES110221 |
| Reporting Date: 22/02/2021 |

| DETS Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description |
|---|---|---|---|---|---|
| ^ 525624 | WS2 | None Supplied | 3.00 | 12.3 | Brown sandy clay |
| ^ 525625 | WS3 | None Supplied | 1.00 | 11.9 | Light brown sandy clay with stones |

*Moisture content is part of procedure E003 & is not an accredited test*

Insufficient Sample I/S

Unsuitable Sample U/S

^ no sampling date provided; unable to confirm if samples are within acceptable holding times

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

| Soil Analysis Certificate - Methodology & Miscellaneous Information |
|---|
| DETS Report No: 21-01726 |
| Envirosolution Ltd |
| Site Reference: Cedar Drive |
| Project / Job Ref: Cedar Drive |
| Order No: ES110221 |
| Reporting Date: 22/02/2021 |

| Matrix | Analysed On | Determinand | Brief Method Description | Method No |
|---|---|---|---|---|
| Soil | D | Boron - Water Soluble | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES | E012 |
| Soil | AR | BTEX | Determination of BTEX by headspace GC-MS | E001 |
| Soil | D | Cations | Determination of cations in soil by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | D | Chloride - Water Soluble (2:1) | Determination of chloride by extraction with water & analysed by ion chromatography | E009 |
| Soil | AR | Chromium - Hexavalent | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016 |
| Soil | AR | Cyanide - Complex | Determination of complex cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Free | Determination of free cyanide by distillation followed by colorimetry | E015 |
| Soil | AR | Cyanide - Total | Determination of total cyanide by distillation followed by colorimetry | E015 |
| Soil | D | Cyclohexane Extractable Matter (CEM) | Gravimetrically determined through extraction with cyclohexane | E011 |
| Soil | AR | Diesel Range Organics (C10 - C24) | Determination of hexane/acetone extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement | E022 |
| Soil | AR | Electrical Conductivity | Determination of electrical conductivity by addition of water followed by electrometric measurement | E023 |
| Soil | D | Elemental Sulphur | Determination of elemental sulphur by solvent extraction followed by GC-MS | E020 |
| Soil | AR | EPH (C10 – C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH Product ID | Determination of acetone/hexane extractable hydrocarbons by GC-FID | E004 |
| Soil | AR | EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40) | Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS | E004 |
| Soil | D | Fluoride - Water Soluble | Determination of Fluoride by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Fraction Organic Carbon (FOC) | Determination of TOC by combustion analyser. | E027 |
| Soil | D | Organic Matter (SOM) | Determination of TOC by combustion analyser. | E027 |
| Soil | D | TOC (Total Organic Carbon) | Determination of TOC by combustion analyser. | E027 |
| Soil | AR | Exchangeable Ammonium | Determination of ammonium by discrete analyser. | E029 |
| Soil | D | FOC (Fraction Organic Carbon) | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | D | Loss on Ignition @ 450oC | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace | E019 |
| Soil | D | Magnesium - Water Soluble | Determination of water soluble magnesium by extraction with water followed by ICP-OES | E025 |
| Soil | D | Metals | Determination of metals by aqua-regia digestion followed by ICP-OES | E002 |
| Soil | AR | Mineral Oil (C10 - C40) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge | E004 |
| Soil | AR | Moisture Content | Moisture content; determined gravimetrically | E003 |
| Soil | D | Nitrate - Water Soluble (2:1) | Determination of nitrate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Organic Matter | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | PAH - Speciated (EPA 16) | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards | E005 |
| Soil | AR | PCB - 7 Congeners | Determination of PCB by extraction with acetone and hexane followed by GC-MS | E008 |
| Soil | D | Petroleum Ether Extract (PEE) | Gravimetrically determined through extraction with petroleum ether | E011 |
| Soil | AR | pH | Determination of pH by addition of water followed by electrometric measurement | E007 |
| Soil | AR | Phenols - Total (monohydric) | Determination of phenols by distillation followed by colorimetry | E021 |
| Soil | D | Phosphate - Water Soluble (2:1) | Determination of phosphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Total | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES | E013 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of sulphate by extraction with water & analysed by ion chromatography | E009 |
| Soil | D | Sulphate (as SO4) - Water Soluble (2:1) | Determination of water soluble sulphate by extraction with water followed by ICP-OES | E014 |
| Soil | AR | Sulphide | Determination of sulphide by distillation followed by colorimetry | E018 |
| Soil | D | Sulphur - Total | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES | E024 |
| Soil | AR | SVOC | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS | E006 |
| Soil | AR | Thiocyanate (as SCN) | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry | E017 |
| Soil | D | Toluene Extractable Matter (TEM) | Gravimetrically determined through extraction with toluene | E011 |
| Soil | D | Total Organic Carbon (TOC) | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate | E010 |
| Soil | AR | TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS | E004 |
| Soil | AR | TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44) | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS | E004 |
| Soil | AR | VOCs | Determination of volatile organic compounds by headspace GC-MS | E001 |
| Soil | AR | VPH (C6-C8 & C8-C10) | Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID | E001 |

D Dried
AR As Received

Laboratory:
Unit 4
Rose Lane Industrial Estate
Lenham Heath
Kent ME17 2JN
01622 851176

UKAS TESTING
4727

XtraTec Ltd
Construction Material Testing

TEST REPORT

Report No: XTE 53717
Page 1 of 1

## TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

| | |
|---|---|
| XTRATEC SAMPLE REF | XTE 53717 |
| CUSTOMER/SITE SAMPLE REF | 525626 |

| | |
|---|---|
| CLIENT | DETS Ltd |
| SITE | Cedar Drive |
| TYPE OF MATERIAL | For Classification |
| SOIL DESCRIPTION | Two large stones |
| SPECIFICATION | For Classification |
| SUPPLIER/SOURCE | Insitu |
| SAMPLING LOCATION | WS1 @ 1.50m |
| SAMPLING METHOD | Unknown |
| SAMPLED BY | Client |
| TYPE OF SAMPLE | Disturbed |
| DATE SAMPLED | Unknown |
| DATE RECEIVED | 16 February 2021 |
| DATE TESTED | 17 February 2021 |
| PREPARATION METHOD | BS 1377-1. 7.3.5.2 (Sub dividing) |

| TEST RESULTS | |
|---|---|
| Moisture Content (%) | 7.6 |

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 23 February 2021

AUTHORISED BY: A Schofield Quality Manager

The results reported represents only the material tested supplied to the laboratory or if the material has been sampled by Xtratec the quanity of the material repesented by the sample. This report shall not be reproduced except in full without approval of the laboratory

Laboratory:
Unit 4
Rose Lane Industrial Estate
Lenham Heath
Kent ME17 2JN
01622 851176

4727

XtraTec Ltd
Construction Material Testing

TEST REPORT

Report No: XTE 53718
Page 1 of 1

## TEST REPORT OF PLASTICITY INDEX

Method: BS 1377-2:1990 Method 4.4 Liquid Limit One Point
Method: BS 1377-2:1990 Method 5.3 Plastic Limit
Method: BS 1377-2:1990 Method 5.4 Plasticity Index

| | |
|---|---|
| XTRATEC SAMPLE REF | XTE 53718 |
| CUSTOMER/SITE SAMPLE REF | 525627 |

| | |
|---|---|
| CLIENT | DETS Ltd |
| SITE | Cedar Drive |
| SOIL DESCRIPTION | Reddish brown sandy Clay |
| SUPPLIER/SOURCE | Insitu |
| SAMPLING LOCATION | WS2 @ 1.50m |
| SAMPLING METHOD | Unknown |
| SAMPLED BY | Client |
| TYPE OF SAMPLE | Disturbed |
| DATE SAMPLED | Unknown |
| DATE RECEIVED | 16 February 2021 |
| DATE TESTED | 17 February 2021 |
| PREPARATION METHOD | Tested by Wet Sieving |

| TEST RESULTS | |
|---|---|
| Percentage Retained 425um (%) | 25 |
| Liquid Limit | 24 |
| Plastic Limit | 12 |
| Plasticity Index | 12 |

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 23 February 2021

AUTHORISED BY: A Schofield Quality Manager

The results reported represents only the material tested supplied to the laboratory or the material has been sampled by Xtratec the quanity of the material repesented by the sample This report shall not be reproduced except in full without approval of the laborato

Laboratory:
Unit 4
Rose Lane Industrial Estate
Lenham Heath
Kent ME17 2JN
01622 851176

4727

XtraTec Ltd
Construction Material Testing

TEST REPORT

Report No: XTE 53718
Page 1 of 1

## TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

| | |
|---|---|
| XTRATEC SAMPLE REF | XTE 53718 |
| CUSTOMER/SITE SAMPLE REF | 525627 |

| | |
|---|---|
| CLIENT | DETS Ltd |
| SITE | Cedar Drive |
| TYPE OF MATERIAL | For Classification |
| SOIL DESCRIPTION | Reddish brown sandy Clay |
| SPECIFICATION | For Classification |
| SUPPLIER/SOURCE | Insitu |
| SAMPLING LOCATION | WS2 @ 1.50m |
| SAMPLING METHOD | Unknown |
| SAMPLED BY | Client |
| TYPE OF SAMPLE | Disturbed |
| DATE SAMPLED | Unknown |
| DATE RECEIVED | 16 February 2021 |
| DATE TESTED | 17 February 2021 |
| PREPARATION METHOD | BS 1377-1. 7.3.5.2 (Sub dividing) |

| TEST RESULTS | |
|---|---|
| Moisture Content (%) | 12.6 |

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 23 February 2021

AUTHORISED BY: A Schofield Quality Manager

The results reported represents only the material tested supplied to the laboratory or if the material has been sampled by Xtratec the quanity of the material repesented by the sample. This report shall not be reproduced except in full without approval of the laboratory

Laboratory:
Unit 4
Rose Lane Industrial Estate
Lenham Heath
Kent ME17 2JN
01622 851176

UKAS TESTING
4727

XtraTec Ltd
Construction Material Testing

TEST REPORT

Report No: XTE 53719
Page 1 of 1

## TEST REPORT OF PLASTICITY INDEX

Method: BS 1377-2:1990 Method 4.4 Liquid Limit One Point
Method: BS 1377-2:1990 Method 5.3 Plastic Limit
Method: BS 1377-2:1990 Method 5.4 Plasticity Index

| | |
|---|---|
| XTRATEC SAMPLE REF | XTE 53719 |
| CUSTOMER/SITE SAMPLE REF | 525628 |

| | |
|---|---|
| CLIENT | DETS Ltd |
| SITE | Cedar Drive |
| SOIL DESCRIPTION | Reddish brown sandy Clay |
| SUPPLIER/SOURCE | Insitu |
| SAMPLING LOCATION | WS3 @ 2.00m |
| SAMPLING METHOD | Unknown |
| SAMPLED BY | Client |
| TYPE OF SAMPLE | Disturbed |
| DATE SAMPLED | Unknown |
| DATE RECEIVED | 16 February 2021 |
| DATE TESTED | 17 February 2021 |
| PREPARATION METHOD | Tested by Wet Sieving |

| TEST RESULTS | |
|---|---|
| Percentage Retained 425um (%) | 25 |
| Liquid Limit | 25 |
| Plastic Limit | 13 |
| Plasticity Index | 12 |

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 23 February 2021

AUTHORISED BY: A Schofield Quality Manager

The results reported represents only the material tested supplied to the laboratory or the material has been sampled by Xtratec the quanity of the material repesented by the sample This report shall not be reproduced except in full without approval of the laborato

Laboratory:
Unit 4
Rose Lane Industrial Estate
Lenham Heath
Kent ME17 2JN
01622 851176

UKAS TESTING
4727

XtraTec Ltd
Construction Material Testing

TEST REPORT

Report No: XTE 53719
Page 1 of 1

## TEST REPORT OF MOISTURE CONTENT OF SOILS

Method: BS 1377-2:1990, Method 3.2.3.3. Oven Drying

| | |
|---|---|
| XTRATEC SAMPLE REF | XTE 53719 |
| CUSTOMER/SITE SAMPLE REF | 525628 |

| | |
|---|---|
| CLIENT | DETS Ltd |
| SITE | Cedar Drive |
| TYPE OF MATERIAL | For Classification |
| SOIL DESCRIPTION | Reddish brown sandy Clay |
| SPECIFICATION | For Classification |
| SUPPLIER/SOURCE | Insitu |
| SAMPLING LOCATION | WS3 @ 2.00m |
| SAMPLING METHOD | Unknown |
| SAMPLED BY | Client |
| TYPE OF SAMPLE | Disturbed |
| DATE SAMPLED | Unknown |
| DATE RECEIVED | 16 February 2021 |
| DATE TESTED | 17 February 2021 |
| PREPARATION METHOD | BS 1377-1. 7.3.5.2 (Sub dividing) |

| TEST RESULTS | |
|---|---|
| Moisture Content (%) | 14.2 |

REMARKS:

ISSUE TO: DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane, Lenham Heath
Maidstone
ME17 2JN

DATE: 23 February 2021

AUTHORISED BY: A Schofield Quality Manager

The results reported represents only the material tested supplied to the laboratory or if the material has been sampled by Xtratec the quanity of the material repesented by the sample. This report shall not be reproduced except in full without approval of the laboratory

# Appendix G – Tier 1 Human Health Risk Assessment

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | **Client Sample ID.:** | **WS1** | **WS1** | **WS2** | **WS2** | **WS3** |
| | | | **Sample Type:** | **SOIL** | **SOIL** | **SOIL** | **SOIL** | **SOIL** |
| | | | **Top Depth (m):** | **0.30m** | **0.80m** | **0.30m** | **1.20m** | **0.30m** |
| | | | **Date Sampled:** | **10-Feb-2021** | **10-Feb-2021** | **10-Feb-2021** | **10-Feb-2021** | **10-Feb-2021** |
| **Determinand** | **Units** | **LOD** | **GAC** | | | | | |
| Moisture | % | 0.020 | | 12 | 13 | 12 | 12 | 13 |
| pH | | 4.0 | | 7.8 | 7.8 | 8.5 | 8.4 | 8.2 |
| **Heavy Metals** | | | | | | | | |
| Arsenic | mg/kg | 1.0 | 37 | 12 | 9.4 | 8.0 | 7.0 | 11 |
| Cadmium | mg/kg | 0.10 | 11 | 0.26 | 0.18 | 0.22 | 0.20 | 0.46 |
| Chromium | mg/kg | 1.0 | 910 | 24 | 28 | 14 | 19 | 49 |
| Copper | mg/kg | 0.50 | 2400 | 46 | 31 | 20 | 44 | 66 |
| Nickel | mg/kg | 0.50 | 130 | 38 | 35 | 15 | 16 | 21 |
| Lead | mg/kg | 0.50 | 200 | 42 | 42 | 60 | 39 | 89 |
| Selenium | mg/kg | 0.20 | 250 | 0.53 | 0.27 | < 0.20 | 0.25 | 0.39 |
| Zinc | mg/kg | 0.50 | 3700 | 72 | 87 | 64 | 87 | 170 |
| **Notes:** | | | | | | | | |
| Only those determinands that have been detected at concentrations in excess of LoD have been included in the table | | | | | | | | |
| GAC = Human health generic assessment criteria for residential land use with plant uptake | | | | | | | | |
| | GAC Exceedance | | | | | | | |