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## **Analytical Report Number : 20-15770**

|                             |                                   |                                                    |            |
|-----------------------------|-----------------------------------|----------------------------------------------------|------------|
| <b>Project / Site name:</b> | Clarendon Road                    | <b>Samples received on:</b>                        | 16/06/2020 |
| <b>Your job number:</b>     | 6075                              | <b>Sample instructed/<br/>Analysis started on:</b> | 23/06/2020 |
| <b>Your order number:</b>   | SRE6075-0005                      | <b>Analysis completed by:</b>                      | 29/06/2020 |
| <b>Report Issue Number:</b> | 1                                 | <b>Report issued on:</b>                           | 29/06/2020 |
| <b>Samples Analysed:</b>    | 1 leachate sample - 1 soil sample |                                                    |            |

**Signed:** Karolina Marek

Karolina Marek  
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 |

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.

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This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report relate only to the sample(s) submitted for testing.

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| Lab Sample Number                       |       |                       |                         | 1542490       |  |  |  |  |
|-----------------------------------------|-------|-----------------------|-------------------------|---------------|--|--|--|--|
| Sample Reference                        |       |                       |                         | SP004         |  |  |  |  |
| Sample Number                           |       |                       |                         | None Supplied |  |  |  |  |
| Depth (m)                               |       |                       |                         | None Supplied |  |  |  |  |
| Date Sampled                            |       |                       |                         | 16/06/2020    |  |  |  |  |
| Time Taken                              |       |                       |                         | None Supplied |  |  |  |  |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of<br>detection | Accreditation<br>Status |               |  |  |  |  |
| Stone Content                           | %     | 0.1                   | NONE                    | < 0.1         |  |  |  |  |
| Moisture Content                        | %     | N/A                   | NONE                    | 9.6           |  |  |  |  |
| Total mass of sample received           | kg    | 0.001                 | NONE                    | 1.5           |  |  |  |  |

|                                               |      |       |           |                      |  |  |  |  |
|-----------------------------------------------|------|-------|-----------|----------------------|--|--|--|--|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Amosite & Chrysotile |  |  |  |  |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected             |  |  |  |  |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | 0.006                |  |  |  |  |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | 0.006                |  |  |  |  |

#### General Inorganics

|                                                                  |       |         |        |      |  |  |  |  |
|------------------------------------------------------------------|-------|---------|--------|------|--|--|--|--|
| Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction | g/l   | 0.00125 | MCERTS | 0.75 |  |  |  |  |
| Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5     | MCERTS | 1500 |  |  |  |  |
| Water Soluble SO <sub>4</sub> (2:1 Leach. Equiv.) 1hr extraction | mg/l  | 1.25    | MCERTS | 747  |  |  |  |  |
| Ammonium as NH <sub>4</sub>                                      | mg/kg | 0.5     | MCERTS | 1.5  |  |  |  |  |



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## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results          | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---------------|-----------|------------------|-------------------|---------------------------------------------------|----------------------|---------------------------------------|----------------------------|
| 1542490       | SP004     |                  | 151               | Sheeting/Board Debris & Loose Fibres              | Amosite & Chrysotile | 0.006                                 | 0.006                      |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.



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|                                             |  |  |  |               |                       |                         |  |  |
|---------------------------------------------|--|--|--|---------------|-----------------------|-------------------------|--|--|
| Lab Sample Number                           |  |  |  | 1542491       |                       |                         |  |  |
| Sample Reference                            |  |  |  | SP004         |                       |                         |  |  |
| Sample Number                               |  |  |  | None Supplied |                       |                         |  |  |
| Depth (m)                                   |  |  |  | None Supplied |                       |                         |  |  |
| Date Sampled                                |  |  |  | 16/06/2020    |                       |                         |  |  |
| Time Taken                                  |  |  |  | None Supplied |                       |                         |  |  |
| Analytical Parameter<br>(Leachate Analysis) |  |  |  | Units         | Limit of<br>detection | Accreditation<br>Status |  |  |

#### General Inorganics

|                             |      |     |           |     |  |  |  |  |
|-----------------------------|------|-----|-----------|-----|--|--|--|--|
| Sulphate as SO <sub>4</sub> | mg/l | 0.1 | ISO 17025 | 106 |  |  |  |  |
| Ammonium as NH <sub>4</sub> | µg/l | 15  | NONE      | 730 |  |  |  |  |



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\* 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 *             |
|-------------------|------------------|---------------|---------------|----------------------------------|
| 1542490           | SP004            | None Supplied | None Supplied | Brown loam and clay with gravel. |

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**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in leachate            | Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | NONE                 |
| Ammonium as NH <sub>4</sub> in soil                | Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                         | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                     | In house method based on HSG 248                                                                       | A001-PL       | D                  | ISO 17025            |
| Asbestos Quantification - Gravimetric              | Asbestos quantification by gravimetric method - in house method based on references.                                                                      | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                      | A006-PL       | D                  | ISO 17025            |
| D.O. for Gravimetric Quant if Screen/ID positive   | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                     | In house method.                                                                                       | L019-UK/PL    | W                  | NONE                 |
| NRA Leachate Prep                                  | 10:1 extract with de-ionised water shaken for 24 hours then filtered.                                                                                     | In-house method based on National Rivers Authority                                                     | L020-PL       | 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.                             | L019-UK/PL    | D                  | NONE                 |
| Sulphate in leachates                              | Determination of sulphate in leachate by acidification followed by ICP-OES.                                                                               | In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""                  | L039-PL       | W                  | ISO 17025            |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |
| Sulphate, water soluble, in soil (1hr extraction)  | Sulphate, water soluble, in soil (1hr extraction)                                                                                                         | In-house method                                                                                        | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' 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.**