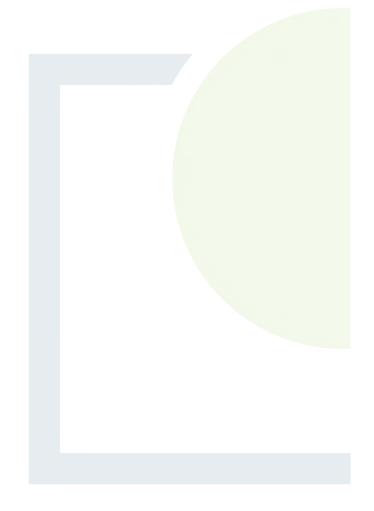


CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE & PLANNING

APPENDIX 5

Groundwater, Leachate and Surface Water Sampling Analysis Results





Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside

> Tel: (01244) 528700 Fax: (01244) 528701

CH5 3US

email: haward encustomers ervices@alsglobal.com

Website: www.alsenvironmental.co.uk

Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:19 August 2020Customer:Fehily TimoneySample Delivery Group (SDG):200702-50Your Reference:P2282Location:Gort LandfillReport No:563812

This report has been revised and directly supersedes 562070 in its entirety.

We received 4 samples on Thursday July 02, 2020 and 4 of these samples were scheduled for analysis which was completed on Wednesday August 19, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager







Validated

563812

562070

Report Number:

Superseded Report:

 SDG:
 200702-50
 Client Reference:
 P2282

 Location:
 Gort Landfill
 Order Number:
 Z2189

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 22408528 | Holy Well | | 0.00 - 0.00 | 01/07/2020 |
| 22408517 | MH-1 | | 0.00 - 0.00 | 01/07/2020 |
| 22408488 | SW1 | | 0.00 - 0.00 | 01/07/2020 |
| 22408504 | SW2 | | 0.00 - 0.00 | 01/07/2020 |

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

15.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

ALS

SDG: 200702-50 Client Reference: P2282 Report Number: 563812 Gort Landfill Z2189 Superseded Report: 562070 Location: Order Number: Results Legend 22408528 22408517 22408488 Lab Sample No(s) X Test No Determination Possible Customer Holy ¥-1 SW1 Sample Reference Ve∥ Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water 0.00 - 0.00 0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) HNO3 Filtered (ALE204) H2SO4 (ALE244) H2SO4 (ALE244) HNO3 Filtered (ALE204) NaOH (ALE245) NaOH (ALE245) DW - Drinking Water Non-regulatory 500ml Plastic (ALE208) (ALE208) 250ml BOD (ALE212) Vial (ALE297) 500ml Plastic Vial (ALE297) UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other Sample Type GW GW GW GW GW GW GW WS WS WS WS WS ᇤ Ε Ε E Ε Ε \mathbb{H} Acid Herbicides by GCMS All NDPs: 0 Tests: 3 Х Х Alkalinity as CaCO3 NDPs: 0 Tests: 1 X Ammoniacal Nitrogen All NDPs: 0 Tests: 2 X Ammonium Low All NDPs: 0 Tests: 4 X X Х Anions by Kone (w) All NDPs: 0 Tests: 4 X X Χ BOD True Total All NDPs: 0 Tests: 3 Х X COD Unfiltered All NDPs: 0 Tests: 3 Х Х All Coliforms (W) NDPs: 0 Tests: 1 Χ Conductivity (at 20 deg.C) All NDPs: 0 Tests: 4 Χ X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 4 X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 4 X X Х Dissolved Oxygen by Probe All NDPs: 0 Tests: 4 Х X X Fluoride All NDPs: 0 Tests: 4 Х Х Х All Mercury Dissolved NDPs: 0 Tests: 4 Х Х X Mineral Oil C10-40 Aqueous (W) All NDPs: 0 Tests: 4 Χ X X

| | 22408488 | | | | | | | 22408504 |
|---------------|---------------|-------------------------------|-----------------------|---------------------------|----------------|---------------------------|---------------|------------------|
| | sw1 | | | | | | | sw2 |
| | | | | | | | | |
| | | | | | | | | 0 |
| | 0.00 - 0.00 | | | | | | | 0.00 - 0.00 |
| NaOH (ALE245) | Vial (ALE297) | 0.5l glass bottle (ALE227) | 250ml BOD (ALE212) | 500ml Plastic (ALE208) | H2SO4 (ALE244) | HNO3 Filtered (ALE204) | NaOH (ALE245) | Vial (ALE297) SW |
| WS | WS | WS | WS | WS | WS | WS | WS | WS |
| X | | x | x | x | x | | X | |
| | | | | X | | Х | | |
| | | | | X | | X | | |
| | | | | Х | | | | |

Validated

CERTIFICATE OF ANALYSIS

| 1 | | |
|------------------|---|--|
| | | |
| | | |
| $\Delta \sqrt{}$ | 6 | |

SDG: 200702-50 Client Reference: P2282 Report Number: 563812 Gort Landfill Z2189 Superseded Report: 562070 Location: Order Number: Results Legend 22408528 22408488 22408517 Lab Sample No(s) X Test No Determination Possible Customer Holy ĭ-ĭ Sample Reference Well Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water 0.00-0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) - 0.00 TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RF - Recreational Water HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic
(ALE208)
250ml BOD
(ALE212)
0.5l glass bottle
(ALE227) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) H2SO4 (ALE244) H2SO4 (ALE244) HNO3 Filtered (ALE204) NaOH (ALE245) HNO3 Filtered (ALE204) NaOH (ALE245) DW - Drinking Water Non-regulatory (ALE208) 250ml BOD (ALE212) Vial (ALE297) Vial (ALE297) 500ml Plastic UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other Sample Type GW GΜ GΜ GΜ GW GΜ WS WS WS G۷ Е Е WS H H Ε Е Nitrite by Kone (w) All NDPs: 0 Tests: 1 X Organotins in Aqueous Samples All NDPs: 0 Tests: 1 Х PCB Congeners - Aqueous (W) All NDPs: 0 Tests: 4 Х Х Х Pesticides (Suite I) by GCMS All NDPs: 0 Tests: 4 Х Х Х Pesticides (Suite II) by GCMS All NDPs: 0 Tests: 4 Х Х Х Pesticides (Suite III) by GCMS All NDPs: 0 Tests: 4 Х Х Х pH Value All NDPs: 0 Tests: 4 Х Χ Phosphate by Kone (w) All NDPs: 0 Tests: 4 X X X Silicon Dissolved by ICP-OES All NDPs: 0 Tests: 1 X Suspended Solids All NDPs: 0 Tests: 3 Х Х SVOC MS (W) - Aqueous ΑII NDPs: 0 Tests: 4 Х Х Х All Total Organic and Inorganic Carbon NDPs: 0 Tests: 2 Х Х VOC MS (W) All NDPs: 0 Tests: 4 X Χ

| 22408488 | | | | 22408504 |
|--------------|---|----------|--------------------------------------|---------------|
| 34 8 8 | | | | 1504 |
| SW1 | | | | SW2 |
| | | | | |
| 0.00 - 0.00 | | | | 0.00 - 0.00 |
| | 250ml BOD (ALE212) 0.5I glass bottle (ALE227) | | NaOH (ALE245) HNO3 Filtered (ALE204) | Vial (ALE297) |
| ws w | SW SW | ws ws | SW SW | WS |
| | x | x | | |
| | | X | | |
| | X | | | |
| | | | | |
| | | X | | |
| | X | | | |
| | | | | |
| X | | | | X |

ALS

 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

| Part | Posulte Logand | | 0 otomo 2 - 1 = 1 | | | | | | |
|--|--|--|----------------------|-------------------|---|--------------------|--------------------|--|--|
| | | | Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | | |
| Service Serv | aq Aqueous / settled sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| Communication Communicatio | tot.unfilt Total / unfiltered sample. | for | Sample Type | Ground Water (GW) | Land Leachate (LE) | Surface Water (SW) | Surface Water (SW) | | |
| Section Control Cont | accreditation status. | | | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | | |
| Components | efficiency of the method. The results of individ | dual | Date Received | | | | | | |
| Commonweal Com | recovery | | | | | | | | |
| Colforms Forces*** CPUTCHN** SUBS COLFORMS FORCES** CPUTCHN** SUBS TRACES* CPUTCHN** SUBS TRACES* CPUTCHN** SUBS TRACES* TRAC | 1-3+§@ Sample deviation (see appendix) | I OD/Unite | AGS Reference | | | | | | |
| Catterine, Fascar' CPULITORN SUB 10 10 | 1 | 1 | | >2420 | | | | | |
| Second contribution 1 | | | | - | | | | | |
| Aller Front Process of Control of | Coliforms, Faecal* | CFU/100ml | SUB | 10 | | | | | |
| Aller Front Process of Control of | Cuppended colide Total | <2 ma/l | TMO22 | | -0 | 7.05 | | | |
| Martinty Trans HOO3 | Suspended solids, Total | <2 mg/l | TIVIUZZ | | \ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \ | | | | |
| Companies Comp | Alkalinity, Total as HCO3 | <2 mg/l | TM043 | 405 | | | | | |
| Companies Comp | | | | | | | | | |
| Organic disabled 43 Singll 170046 9.28 8.84 968 10.4 10.5 10.5 10.5 10.5 10.5 10.6 10.5 10.5 10.5 10.6 10.4 10. | BOD, unfiltered | <1 mg/l | TM045 | | l . | | | | |
| Control Cont | Overson dissolved | <0.2 ma/l | TMO46 | 0.20 | | | | | |
| Marmoniscal Nivogen as N 402 rgs 178099 106 2 | Oxygen, dissolved | <0.3 mg/l | 1 WU46 | 9.28 | 9.04 | 9.09 | 10.4 | | |
| Ammeniacal Nirogen as N 402 rgr) 170099 106 6.573 10.0296 7.00099 10.000999 10.000999999999999999999999999999999999 | Organic Carbon, Total | <3 mg/l | TM090 | 3.47 | 5.71 | | | | |
| ### Armonical Nitrogen is N (low level) ### ### ### ### ### ### ### ### ### # | | _ | | # | | | | | |
| Ammonicacy Nirogen as N (low level) | Ammoniacal Nitrogen as N | <0.2 mg/l | TM099 | | 0.573 | | | | |
| See 10 | Ammoniacal Nitrogon on N. /low | <0.01 ma/l | TMOOO | 1.06 | 0.664 | 0.0206 | | | |
| Flooride | | \\\.\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 1 101099 | | 0.004 | | | | |
| Conductivity @ 20 deg C | | <0.5 mg/l | TM104 | | <0.5 | | | | |
| Conductivity @ 20 deg C | | | | # | | | | | |
| Conductivity (g) 20 deg C | COD, unfiltered | <7 mg/l | TM107 | | I | | | | |
| Millowary (diss. filt) | Conductivity @ 20 dog C | <0.02 | TM120 | 0.602 | | | | | |
| Antenory (siss fit) | Conductivity (@ 20 deg.C | 1 | TIVITZU | | I | | | | |
| Areance (diss. filit) | Antimony (diss.filt) | | TM152 | | | | | | |
| Berium (diss.fit) | | | | | | | | | |
| Barlum (diss.filt) | Arsenic (diss.filt) | <0.5 µg/l | TM152 | | I | | | | |
| Beryllum (diss.fit) | Parium (dies filt) | <0.2 ug/l | TM152 | | | | | | |
| Beryllium (diss.filit) | Darium (diss.iiit) | \0.2 μg/i | TIVITOZ | | I | | | | |
| Boron (diss.filt) | Beryllium (diss.filt) | <0.1 µg/l | TM152 | | | | | | |
| Cadmium (diss.filt) | | | | | | | | | |
| Cadmium (diss.filt) | Boron (diss.filt) | <10 µg/l | TM152 | | l . | | | | |
| Chromium (diss.filt) | Cadmium (diss filt) | <0.08 µg/l | TM152 | | | <0.08 | <0.08 | | |
| Cobalt (diss.filt) Cobalt | Guarrian (discinity | 0.00 µg/. | | | I | | | | |
| Cobalt (diss.filt) | Chromium (diss.filt) | <1 µg/l | TM152 | <1 | <1 | <1 | <1 | | |
| Copper (diss.filt) Cosper | | | | # | | # | # | | |
| Copper (diss.filt) <0.3 μg/l TM152 1.33 # 20.2 # 20.2 # 20.4 | Cobalt (diss.filt) | <0.5 µg/l | TM152 | | I | | | | |
| Lead (diss.filt) | Copper (diss.filt) | <0.3 µg/l | TM152 | 1.33 | | 1.11 | 0.699 | | |
| Manganese (diss.filt) | | , | | | | # | | | |
| Manganese (diss.filt) <3 μg/l TM152 58 # 32.7 # 50.9 # 38.9 # | Lead (diss.filt) | <0.2 µg/l | TM152 | | | | | | |
| Molybdenum (diss.filt) Sa μg/l TM152 T | Manganaga /-E EIII | -0 . " | T14450 | | | | | | |
| Molybdenum (diss.filt) C3 μg/l TM152 1.31 1.35 1.24 0.795 | ivianganese (diss.fiit) | <3 μg/I | 1W152 | | | | | | |
| Nickel (diss.filt) CO.4 μg/l TM152 1.31 1.35 1.24 0.795 | Molybdenum (diss.filt) | <3 µg/l | TM152 | п | | н | п | | |
| Phosphorus (diss.filt) <10 μg/l TM152 206 67.9 21.3 12.4 # Selenium (diss.filt) <1 μg/l | | | | | # | | | | |
| Phosphorus (diss.filt) <10 μg/l TM152 206 67.9 21.3 12.4 # </td <td>Nickel (diss.filt)</td> <td><0.4 µg/l</td> <td>TM152</td> <td></td> <td></td> <td></td> <td></td> <td> </td> <td></td> | Nickel (diss.filt) | <0.4 µg/l | TM152 | | | | | | |
| Selenium (diss.filt) Selenium (diss.filt) Tellurium (diss.filt) T | Phosphorus (dies filt) | <10.00// | TM152 | | | | | | |
| Selenium (diss.filt) <1 μg/l TM152 <1 μg/l <1 μg/l TM152 <1 μg/l <1 μg/l <1 μg/l <1 μg/l TM152 <2 μg/l <2 μg/l TM152 <2 μg/l <2 μg/l TM152 <2 μg/l <2 μg/l <2 μg/l TM152 <2 μg/l | i noophorao (aloo.iiit) | 10 μg/ι | TIVITUE | | I | | | | |
| Tellurium (diss.filt) <2 μg/l TM152 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 | Selenium (diss.filt) | <1 µg/l | TM152 | <1 | | <1 | | | |
| Thallium (diss.filt) | | | | # | | # | # | | |
| Titanium (diss.filt) | Tellurium (diss.filt) | <2 µg/l | TM152 | | <2 | | | | |
| Titanium (diss.filt) | Thallium (diss filt) | <2 110/1 | TM152 | <2 | <2 | <2 | <2 | | |
| Titanium (diss.filt) <1 μg/l TM152 3.32 # | | - µg/i | 111102 | | I | | | | |
| Uranium (diss.filt) <0.5 μg/l TM152 1.05 # <td>Titanium (diss.filt)</td> <td><1 µg/l</td> <td>TM152</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | Titanium (diss.filt) | <1 µg/l | TM152 | | | | | | |
| Vanadium (diss.filt) <1 μg/l TM152 <1 μg/l Zinc (diss.filt) <1 μg/l | | | | | | | | | |
| Vanadium (diss.filt) <1 μg/l TM152 <1 μg/l # Zinc (diss.filt) <1 μg/l | Uranium (diss.filt) | <0.5 µg/l | TM152 | | | | | | |
| Zinc (diss.filt) | Vanadium (diss.filt) | <1 µn/l | TM152 | | | | | | |
| | | ייפיק י | 2 | | I | | | | |
| | Zinc (diss.filt) | <1 µg/l | TM152 | | | | | | |
| | | | | # | # | # | # | | |



 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

| Results Legend | (| Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | |
|---|-----------------|------------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|--|
| # ISO17025 accredited. M mCERTS accredited. | | , , , | Tioly Well | | 0111 | ONE | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | |
| * Subcontracted - refer to subcontractor report accreditation status. | for | Sample Type Date Sampled | Ground Water (GW) 01/07/2020 | Land Leachate (LE) 01/07/2020 | Surface Water (SW) 01/07/2020 | Surface Water (SW) 01/07/2020 | |
| ** % recovery of the surrogate standard to check efficiency of the method. The results of individe | | Sample Time Date Received | 02/07/2020 | 02/07/2020 | 02/07/2020 | 02/07/2020 | |
| compounds within samples aren't corrected for recovery | or the | SDG Ref | 200702-50 22408528 | 200702-50 22408517 | 200702-50 22408488 | 200702-50 22408504 | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22400020 | 22400317 | 22400400 | 22400304 | |
| Component Tin (Diss.Filt) | LOD/Units | Method TM152 | | <1 | | | |
| TIII (DISS.FIII) | <1 µg/l | 1101132 | | * | | | |
| Silver (diss.filt) | <0.5 µg/l | TM152 | | <0.5 # | | | |
| Sodium (Dis.Filt) | <0.076 mg/l | TM152 | 22.6 | 18.7 # | 10.8 | 10.9 | |
| Magnesium (Dis.Filt) | <0.036 mg/l | TM152 | 13.3 # | 10.9 # | 2.81 | 2.83 | |
| Potassium (Dis.Filt) | <0.2 mg/l | TM152 | 4.89 # | 7.65 # | 1.27 # | 1.24 # | |
| Calcium (Dis.Filt) | <0.2 mg/l | TM152 | 132 # | 124 # | 21.5 | 22.2 | |
| Iron (Dis.Filt) | <0.019 mg/l | TM152 | 0.258 | 0.0943 # | 0.118 | 0.0749 # | |
| Mineral oil >C10 C40 (aq) | <100 µg/l | TM172 | <100 | <100 | <100 | <100 | |
| Mercury (diss.filt) | <0.01 µg/l | TM183 | <0.01 | <0.01 # | <0.01 | <0.01 | |
| Phosphate (Ortho as PO4) | <0.05 mg/l | TM184 | 0.368 # | 0.095 | <0.05 # | <0.05 # | |
| Sulphate | <2 mg/l | TM184 | 23.4 | 22.5 | 5.2 # | 4.4 # | |
| Chloride | <2 mg/l | TM184 | 44.1 # | 24.5 | 21.7 # | 21.8 # | |
| Nitrite as N | <0.0152 mg/l | TM184 | | 0.0201 | | | |
| Total Oxidised Nitrogen as N | <0.1 mg/l | TM184 | 1.73 # | 4.37 | | | |
| Sulphate (soluble) as S | <1 mg/l | TM184 | 7.8 # | 7.5 | 1.73 # | 1.47 # | |
| PCB congener 28 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | <0.015 | |
| PCB congener 52 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | <0.015 | |
| PCB congener 101 | <0.015 µg/l | | <0.015 | <0.015 | <0.015 | <0.015 | |
| PCB congener 118 | <0.015 µg/l | | <0.015 | <0.015 | <0.015 | <0.015 | |
| PCB congener 138 | <0.015 µg/l | | <0.015 | <0.015 | <0.015 | <0.015 | |
| PCB congener 153 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | <0.015 | |
| PCB congener 180 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | <0.015 | |
| Sum of detected EC7 PCB's | <0.105 µg/l | TM197 | <0.105 | <0.105 | <0.105 | <0.105 | |
| Cyanide, Total | <0.05 mg/l | TM227 | <0.05 • # | <0.05 • # | <0.05 | <0.05 | |
| Cyanide, Free | <0.05 mg/l | TM227 | | <0.05 • # | | | |
| pH | <1 pH Units | TM256 | 7.28 # | 7.75 | 7.37 # | 7.54 # | |
| Silicon (diss.filt) | <0.05 mg/l | TM284 | | 3.19 | | | |
| Dibutyl tin | <5 ng/l | TM328 | | <5 | | | |
| Tributyl tin | <1 ng/l | TM328 | | <1 | | | |
| Tetrabutyl tin | <2 ng/l | TM328 | | <2 | | | |
| Triphenyl tin | <1 ng/l | TM328 | | <1 | | | |
| Surrogate | % | TM328 | | 79.8 | | | |
| Trifluralin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |



 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

| # ISO17025 a | Results Legend | С | ustomer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | |
|-------------------------------|---|--------------------------|------------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| M mCERTS at aq Aqueous / s | ccredited. settled sample. | | Don'th (m) | | | | | |
| tot.unfilt Total / unfil | filtered sample. Itered sample. cted - refer to subcontractor report for | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Land Leachate (LE) | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | |
| accreditation ** % recovery | on status. of the surrogate standard to check the | | Date Sampled Sample Time | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | |
| compounds | of the method. The results of individual s within samples aren't corrected for the | | Date Received SDG Ref | 02/07/2020 200702-50 | 02/07/2020 200702-50 | 02/07/2020 200702-50 | 02/07/2020 200702-50 | |
| | each confirmed viation (see appendix) | | Lab Sample No.(s) AGS Reference | 22408528 | 22408517 | 22408488 | 22408504 | |
| Component | L | OD/Units | Method | | | | | |
| alpha-HCH | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| gamma-HCH (L | indane) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Heptachlor | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Aldrin | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| beta-HCH | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Isodrin | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| delta-HCH | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Heptachlor epox | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| o,p'-DDE | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Endosulphan I | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| trans-Chlordane | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| cis-Chlordane | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| p,p'-DDE | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Dieldrin | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| o,p'-DDD (TDE) | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Endrin | | <0.01 µg/l | TM343 | <0.02 | <0.02 | <0.01 | <0.02 | |
| o,p'-DDT | | <0.01 µg/l | TM343 | <0.03 | <0.03 | <0.01 | <0.03 | |
| p,p'-DDD (TDE) | | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Endosulphan II | | <0.02 µg/l | TM343 | <0.02 | <0.02 | <0.02 | <0.02 | |
| p,p'-DDT | | <0.01 µg/l | TM343 | <0.05 | <0.05 | <0.02 | <0.05 | |
| o,p'-Methoxychl | | <0.01 µg/l | TM343 | <0.03 | <0.03 | <0.02 | <0.03 | |
| p,p'-Methoxychl | | <0.01 µg/l | TM343 | <0.05 | <0.05 | <0.02 | <0.05 | |
| Endosulphan Su | | <0.02 µg/l <0.01 µg/l | TM343 TM343 | <0.02 | <0.02 | <0.02 <0.01 | <0.02 <0.01 | |
| Permethrin I | | <0.01 μg/l <0.01 μg/l | TM343 | <0.01 | <0.01 | <0.01 | <0.01 | |
| 1,3,5-Trichlorob | | <0.01 μg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Hexachlorobuta | | <0.01 μg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| 1,2,4-Trichlorob | | <0.01 μg/l <0.01 μg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| | | | | <0.01 | <0.01 | | <0.01 | |
| 1,2,3-Trichlorob | | <0.01 µg/l | TM344 | | | <0.01 | | |
| Dichlorvos | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Dichlobenil | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Mevinphos | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Tecnazene | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |

563812 562070

CERTIFICATE OF ANALYSIS



| # ISO | Results Legend | | Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | |
|----------------|---|------------|------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| M mCl | 017025 accredited. ERTS accredited. ueous / settled sample. | | | | | | | |
| diss.filt Diss | solved / filtered sample. al / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Land Leachate (LE) | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | |
| acci | bcontracted - refer to subcontractor report for creditation status. | | Date Sampled | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | |
| effic | recovery of the surrogate standard to check ciency of the method. The results of individ | lual | Sample Time Date Received | 02/07/2020 | 02/07/2020 | 02/07/2020 | 02/07/2020 | |
| reco | npounds within samples aren't corrected for overy gger breach confirmed | rtne | SDG Ref Lab Sample No.(s) | 200702-50 22408528 | 200702-50 22408517 | 200702-50 22408488 | 200702-50 22408504 | |
| 1-3+§@ Sam | mple deviation (see appendix) | LOD/Units | AGS Reference | | | | | |
| Hexachloro | | <0.01 µg/l | Method TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Demeton-S | G-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Phorate | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Diazinon | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Triallate | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Atrazine | | <0.01 µg/l | TM344 | 0.0777 | 0.0174 | <0.01 | <0.01 | |
| Simazine | | <0.01 µg/l | TM344 | 0.0312 | <0.01 | <0.01 | <0.01 | |
| Disulfoton | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Propetampl | hos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Chlorpyriph | nos-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Dimethoate | • | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Pirimiphos- | · | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Chlorpyriph | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Methyl Para | athion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Malathion | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Fenthion | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Fenitrothior | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Triadimefor | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Pendimetha | alin | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Parathion | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Chlorfenvin | nphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| trans-Chlor | dane | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| cis-Chlorda | ane | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Ethion | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Carbophen | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Triazophos | | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Phosalone | | <0.01 µg/l | TM344 | <0.02 | <0.02 | <0.02 | <0.02 | |
| Azinphos m | · | <0.02 µg/l | TM344 | <0.04 | <0.04 | <0.04 | <0.04 | |
| Azinphos e | thyl | <0.02 µg/l | TM344 | <0.02 | <0.02 | <0.02 | <0.02 | |
| Etridiazole | | <0.01 µg/l | TM345 | <0.02 | <0.02 | <0.02 | <0.02 | |
| Pentachloro | obenzene | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Propachlor | | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Quintozene | e (PCNB) | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |

563812 562070

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

| Results Legend | | Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | |
|--|---------------------------|------------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|
| # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. | | Castonici Gampie Rei. | noiy vveii | IVIT-1 | SWI | SVVZ | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Land Leachate (LE) | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | |
| * Subcontracted - refer to subcontracto accreditation status. * % recovery of the surrogate standard | | Date Sampled Sample Time | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | |
| efficiency of the method. The results of compounds within samples aren't cor recovery | of individual | Date Received SDG Ref | 02/07/2020 200702-50 | 02/07/2020 200702-50 | 02/07/2020 200702-50 | 02/07/2020 200702-50 | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22408528 | 22408517 | 22408488 | 22408504 | |
| Component Omethoate | LOD/Uni <0.01 μ | | <0.01 | <0.01 | <0.01 | <0.01 | |
| | · | <u> </u> | | | | | |
| Propazine | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Propyzamide | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Alachlor | <0.01 µ | g/l TM345 | <0.02 | <0.02 | <0.02 | <0.02 | |
| Prometryn | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Telodrin | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Terbutryn | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Chlorothalonil | <0.01 µ | g/l TM345 | <0.02 | <0.02 | <0.02 | <0.02 | |
| Etrimphos | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Metazachlor | <0.01 µ | g/l TM345 | <0.02 | <0.02 | <0.02 | <0.02 | |
| Cyanazine | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Trietazine | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Coumaphos | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Phosphamidon I | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Phosphamidon II | <0.01 µ | g/l TM345 | <0.01 | <0.01 | <0.01 | <0.01 | |
| Dinitro-o-cresol | <0.1 μο | g/l TM411 | <0.2 | | <0.2 | 0.114 | |
| Clopyralid | <0.04 µ | g/l TM411 | <0.08 | | <0.08 | <0.04 | |
| МСРА | <0.05 μ | g/l TM411 | <0.1 | | <0.1 | <0.05 | |
| Mecoprop | <0.04 µ | g/l TM411 | <0.08 | | <0.08 | <0.04 | |
| Dicamba | <0.04 µ | g/l TM411 | <0.08 | | <0.08 | <0.04 | |
| МСРВ | <0.05 µ | g/l TM411 | <0.1 | | <0.1 | <0.05 | |
| 2,4-DB | <0.1 μο | g/l TM411 | <0.2 | | <0.2 | <0.1 | |
| 2,3,6-Trichlorobenzoic acid | <0.05 µ | g/l TM411 | <0.1 | | <0.1 | <0.05 | |
| Dichlorprop | <0.1 μο | g/l TM411 | <0.2 | | <0.2 | <0.1 | |
| Triclopyr | <0.05 µ | g/l TM411 | <0.75 | | <0.75 | <0.75 | |
| Fenoprop (Silvex) | <0.1 μο | g/l TM411 | <0.2 | | <0.2 | <0.1 | |
| 2,4-Dichlorophenoxyacetic acid | <0.05 µ | g/l TM411 | <0.1 | | <0.1 | <0.05 | |
| 2,4,5-Trichlorophenoxyacetic acid | <0.05 µ | g/l TM411 | <0.1 | | <0.1 | <0.05 | |
| Bromoxynil | <0.04 μ | g/l TM411 | <0.08 | | <0.08 | <0.08 | |
| Benazolin | <0.04 μ | g/l TM411 | <0.08 | | <0.08 | <0.08 | |
| loxynil | <0.05 µ | g/l TM411 | <0.1 | | <0.1 | <0.1 | |
| Pentachlorophenol | <0.04 μ | g/l TM411 | <0.08 | | <0.08 | <0.08 | |
| Fluoroxypyr | <0.1 μς | g/l TM411 | <0.2 | | <0.2 | <0.2 | |
| | | | | | | | |

200702-50 Gort Landfill P2282 Z2189 Report Number: Superseded Report: 563812 562070 SDG: Client Reference: Location: Order Number:

| SVOC | MS (| (W) | - Aqueous |
|------|------|-----|-----------|
| | | | |

| SVOC MS (W) - Aqueous | s | | | | | | |
|---|----------------------|------------------------------|--|---------------------------------------|-----------------------------------|-----------------------------------|------|
| Results Legend # ISO17025 accredited. | (| Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | |
| M mCERTS accredited. aq Aqueous / settled sample. | | Double (m) | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Land Leachate (LE) | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | |
| * Subcontracted - refer to subcontractor report accreditation status. | | Date Sampled Sample Time | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | |
| ** % recovery of the surrogate standard to check efficiency of the method. The results of indivi- compounds within samples aren't corrected for | dual | Date Received | 02/07/2020 | 02/07/2020 | 02/07/2020 | 02/07/2020 | |
| recovery (F) Trigger breach confirmed | or the | SDG Ref Lab Sample No.(s) | 200702-50 22408528 | 200702-50 22408517 | 200702-50 22408488 | 200702-50 22408504 | |
| 1-3+§@ Sample deviation (see appendix) | | AGS Reference | | | | | |
| 1,2,4-Trichlorobenzene (aq) | LOD/Units <1 μg/l | Method TM176 | <1 | <2 | <1 | <1 | |
| 1,2,4-THIGHIOTODEHZEHE (aq) | ν ημηνί | TIWITTO | # | `` | # | # | |
| 1,2-Dichlorobenzene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 1,3-Dichlorobenzene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| 1,4-Dichlorobenzene (aq) | <1 µg/l | TM176 | # <1 | <2 | <1 | # <1 | |
| 1,4-Dicilioroperizerie (aq) | ν ημηνί | TIWITTO | # | `` | # | # | |
| 2,4,5-Trichlorophenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 2,4,6-Trichlorophenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| 2,4-Dichlorophenol (aq) | <1 µg/l | TM176 | # <1 | <2 | # <1 | # <1 | |
| 2,4-Dictilorophichor (aq) | ν ημηνί | TIWITTO | # | `` | # | # | |
| 2,4-Dimethylphenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 2,4-Dinitrotoluene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 " | |
| 2,6-Dinitrotoluene (aq) | <1 µg/l | TM176 | # <1 | <2 | # <1 | # <1 | |
| 2,0-Diritiotolderie (aq) | \1 μg/1 | TIVITO | - " | \2 | # | * | |
| 2-Chloronaphthalene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 2-Chlorophenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| 2-Methylnaphthalene (aq) | <1 µg/l | TM176 | # <1 | <2 | <1 | * <1 | |
| 2-Metrymaphthalene (aq) | ν ημηνί | TIWITTO | # | `` | # | # | |
| 2-Methylphenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 2-Nitroaniline (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| 2-Nitrophenol (aq) | <1 µg/l | TM176 | # <1 | <2 | # <1 | # <1 | |
| 2 milophonol (aq) | 1 49/1 | 1111110 | # | - | # | # | |
| 3-Nitroaniline (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 4-Bromophenylphenylether (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | |
| 4-Chloro-3-methylphenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | . 1-3- | | # | _ | # | # | |
| 4-Chloroaniline (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| 1011 | 4 " | T14470 | | | | | |
| 4-Chlorophenylphenylether (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | |
| 4-Methylphenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| 4-Nitroaniline (aq) | <1 µg/l | TM176 | <1 | <2 | <1 " | <1 | |
| 4-Nitrophenol (aq) | 21/l | TM176 | # <1 | <2 | <1 | # <1 | |
| 4-Millophenol (aq) | <1 µg/l | 11011/0 | <u>``</u> | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | \ | `` | |
| Azobenzene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| Acenaphthylene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 " | |
| Acenaphthene (aq) | <1 µg/l | TM176 | # <1 | <2 | <1 | # <1 | |
| Accuapitulette (aq) | ~ ι μg/ι | 11011/0 | <i #<="" td=""><td></td><td><1 #</td><td><1 #</td><td> </td></i> | | <1 # | <1 # | |
| Anthracene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| | | | # | | # | # | |
| bis(2-Chloroethyl)ether (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| bis(2-Chloroethoxy)methane | <1 µg/l | TM176 | # <1 | <2 | <1 | # <1 | |
| (aq) | ~1 μg/1 | I IVI I / O | - " | | # | - " | |
| bis(2-Ethylhexyl) phthalate (aq) | <2 µg/l | TM176 | <2 | <4 | <2 | <2 | |
| | | | # | | # | # | |
| Butylbenzyl phthalate (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | |
| Benzo(a)anthracene (aq) | <1 µg/l | TM176 | # <1 | <2 | <1 | # <1 | |
| Donzolajantillabelle (ay) | - 1 μg/1 | 1101170 | - " | `` | <u> </u> | -1 # | |
| R | - | | | | | | |

ALS

 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

| SVOC MS (W) - Aqueous | S | | | | | | | |
|--|------------|------------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|----------|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Land Leachate (LE) | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | | |
| * Subcontracted - refer to subcontractor report accreditation status. | | Date Sampled | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | | |
| ** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi | dual | Sample Time Date Received | 02/07/2020 | 02/07/2020 | 02/07/2020 | 02/07/2020 | | |
| compounds within samples aren't corrected for recovery | or the | SDG Ref | 200702-50 22408528 | 200702-50 22408517 | 200702-50 22408488 | 200702-50 22408504 | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22.100020 | 22 1000 17 | 22.100.100 | 22.00001 | | |
| Component Denne/h/fluerenthene (eg) | LOD/Units | _ | <1 | <2 | <1 | <1 | | |
| Benzo(b)fluoranthene (aq) | <1 µg/l | TM176 | - " | \2 | " | - " | | |
| Benzo(k)fluoranthene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| . , , , , , , , , , , , , , , , , , , , | | | # | | # | # | | |
| Benzo(a)pyrene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| 2 (1) 1 () | 4 " | T14470 | # | | # | # | | |
| Benzo(g,h,i)perylene (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | | |
| Carbazole (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| \ | | | # | | # | # | | |
| Chrysene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| | | | # | | # | # | | |
| Dibenzofuran (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | | |
| n-Dibutyl phthalate (aq) | <1 µg/l | TM176 | # <1 | <2 | # <1 | # <1 | | |
| 5.55.5. p | l pg// | 1 | # | | # | # | <u> </u> | <u> </u> |
| Diethyl phthalate (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| | | | # | | # | # | | |
| Dibenzo(a,h)anthracene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| Dimethyl phthalate (aq) | <1 µg/l | TM176 | # <1 | <2 | <1 | # <1 | | |
| Difficulty pritifalate (aq) | \ \ \ μg/ι | 1101170 | - " | \2 | " | * | | |
| n-Dioctyl phthalate (aq) | <5 µg/l | TM176 | <5 | <10 | <5 | <5 | | |
| | | | # | | # | # | | |
| Fluoranthene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| FI () | .4 () | T14470 | # | | # | # | | |
| Fluorene (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | | |
| Hexachlorobenzene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| ` " | | | # | | # | # | | |
| Hexachlorobutadiene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| Dente ship as about 1 (a.s.) | 44 // | TM470 | # | -10 | # | # | | |
| Pentachlorophenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| Phenol (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| , <i>"</i> | | | | | | | | |
| n-Nitroso-n-dipropylamine (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| | .4 () | T14470 | # | <2 | # | # <1 | | |
| Hexachloroethane (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | | |
| Nitrobenzene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| ν υ | 10 | | # | | # | # | | |
| Naphthalene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| leash-way () | .4 8 | T144=0 | # | | # | # | | |
| Isophorone (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | | |
| Hexachlorocyclopentadiene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| | " | | | | | | | |
| Phenanthrene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| Index (4.0.2 % () | .4 " | T144=0 | # | -0 | # | # | | |
| Indeno(1,2,3-cd)pyrene (aq) | <1 µg/l | TM176 | <1 # | <2 | <1 # | <1 # | | |
| Pyrene (aq) | <1 µg/l | TM176 | <1 | <2 | <1 | <1 | | |
| 7 : : V: W | | | # | | # | # | | |
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ALS

 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

| VOC MS (W) Results Legend | | | | | | | |
|--|----------------|------------------------------|-----------------------|--|-----------------------|-----------------------|--|
| # ISO17025 accredited. M mCERTS accredited. | | Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | t for | Sample Type | Ground Water (GW) | Land Leachate (LE) | Surface Water (SW) | Surface Water (SW) | |
| accreditation status. ** % recovery of the surrogate standard to chec | | Date Sampled Sample Time | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | |
| efficiency of the method. The results of indivi | idual | Date Received | 02/07/2020 | 02/07/2020 | 02/07/2020 | 02/07/2020 | |
| recovery | ior tile | SDG Ref Lab Sample No.(s) | 200702-50 22408528 | 200702-50 22408517 | 200702-50 22408488 | 200702-50 22408504 | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | AGS Reference | 22.100020 | 22.000.1 | 22.00.00 | 22.00001 | |
| Component Dibromofluoromethane** | LOD/Units % | Method TM208 | 113 | 114 | 112 | 113 | |
| Dibromoliuoromethane | 70 | 1 W2U0 | 113 | 114 | 112 | 113 | |
| Toluene-d8** | % | TM208 | 100 | 99 | 99 | 99.3 | |
| 4-Bromofluorobenzene** | % | TM208 | 95.2 | 94.4 | 96.6 | 94.7 | |
| Dichlorodifluoromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Chloromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Vinyl chloride | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Bromomethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Chloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Trichlorofluoromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| 1,1-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Carbon disulphide | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Dichloromethane | <3 µg/l | TM208 | <3 # | <3 # | <3 # | <3 # | |
| Methyl tertiary butyl ether (MTBE) | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| trans-1,2-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| 1,1-Dichloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| cis-1,2-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| 2,2-Dichloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | |
| Bromochloromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| Chloroform | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | |
| 1,1,1-Trichloroethane | <1 µg/l | TM208 | <1 # | <1 # <1 | <1 # <1 | <1 # <1 | |
| 1,1-Dichloropropene Carbontetrachloride | <1 µg/l | TM208 TM208 | <1 # | <1 <1 | <1 # <1 | <1 # <1 | |
| | <1 µg/l | TM208 | <1 # | <1 <1 | <1 <1 | <1 # | |
| 1,2-Dichloroethane | <1 µg/l | | <1 # | # | <1 <1 | # | |
| Benzene | <1 µg/l | TM208 TM208 | <1 # | <1 # <1 | <1 # <1 | <1 # <1 | |
| Trichloroethene 1,2-Dichloropropane | <1 µg/l | TM208 | <1 # <1 | <1 <1 | <1 # <1 | <1 # <1 | |
| Dibromomethane | <1 µg/l | TM208 | <1 <1 | <1 <1 | <1 <1 | <1 # | |
| Bromodichloromethane | <1 μg/l | TM208 | <1 <1 | ************************************** | <1 <1 | *1 <1 | |
| cis-1,3-Dichloropropene | <1 μg/l | TM208 | <1 <1 | <1 <1 | <1 <1 | <1 # | |
| Toluene | <1 μg/l | TM208 | <1 <1 | *1 <1 | *1 <1 | *1 <1 | |
| trans-1,3-Dichloropropene | <1 μg/l | TM208 | <1 <1 | ************************************** | *1 <1 | *1 <1 | |
| 1,1,2-Trichloroethane | <1 μg/l | TM208 | <1 <1 | ************************************** | <1 # | <1 <1 | |
| 1,3-Dichloropropane | <1 μg/l | TM208 | <1 <1 | *1 <1 | <1 ** | *1 <1 | |
| .,o Diomoropropuno | -1 μg/i | TIVIZOU | # | # | # | # | |

ALS

 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

| VOC MS (W) | | | | | | | | |
|--|----------------------|------------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | B. 11.1 | | | , | , | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Land Leachate (LE) | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | | |
| * Subcontracted - refer to subcontractor report accreditation status. | | Date Sampled Sample Time | 01/07/2020 | 01/07/2020 | 01/07/2020 | 01/07/2020 | | |
| ** % recovery of the surrogate standard to check efficiency of the method. The results of individe compounds within samples aren't corrected for | dual | Date Received | 02/07/2020 | 02/07/2020 | 02/07/2020 | 02/07/2020 | | |
| recovery (F) Trigger breach confirmed | or the | SDG Ref Lab Sample No.(s) | 200702-50 22408528 | 200702-50 22408517 | 200702-50 22408488 | 200702-50 22408504 | | |
| 1-3◆§@ Sample deviation (see appendix) | | AGS Reference | | | | | | |
| Component Tetrachloroethene | LOD/Units <1 µg/l | Method TM208 | <1 | <1 | <1 | <1 | | |
| | . 129 | 200 | . # | . # | . # | . # | | |
| Dibromochloromethane | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| 40.5" | 4 0 | T1 1000 | # | # | # | # | | |
| 1,2-Dibromoethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| Chlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | | | # | # | # | # | | |
| 1,1,1,2-Tetrachloroethane | <1 µg/l | TM208 | <1 | <1 | <1 " | <1 | | |
| Ethylbenzene | <1 µg/l | TM208 | # <1 | # <1 | # <1 | # <1 | | |
| Laryiberizerie | 11 µ9/1 | TIVIZOO | # | # | # | # | | |
| m,p-Xylene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | | | # | # | # | # | | |
| o-Xylene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| Styrene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| ., | 13 | | # | # | # | # | | |
| Bromoform | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| laan ran dhan an a | -1 · · · · // | TMOOO | # | # | # | # | | |
| Isopropylbenzene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| 1,1,2,2-Tetrachloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | | | # | # | # | # | | |
| 1,2,3-Trichloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| Bromobenzene | <1 µg/l | TM208 | * <1 | # <1 | # <1 | # <1 | | |
| Bromobenzene | 11 µ9/1 | TIVIZOO | # | # | # | # | | |
| Propylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| 0.011 | 4 0 | T1 1000 | # | # | # | # | | |
| 2-Chlorotoluene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| 1,3,5-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | 10 | | # | # | # | # | | |
| 4-Chlorotoluene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| tert-Butylbenzene | <1 µg/l | TM208 | * <1 | # <1 | # <1 | # <1 | | |
| tert-Dutyiberizerie | ν μ9/ι | TIVIZOO | # | * | # | # | | |
| 1,2,4-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | | | # | # | # | # | | |
| sec-Butylbenzene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| 4-iso-Propyltoluene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | 13 | | # | # | # | # | | |
| 1,3-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| 1,4-Dichlorobenzene | <1 µg/l | TM208 | # <1 | # <1 | # <1 | # <1 | | |
| 1,4-Dictiloroperizerie | ~ ι μg/ι | TIVIZUO | - " | - " | -1 # | * | | |
| n-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | | | # | # | # | # | | |
| 1,2-Dichlorobenzene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| 1,2-Dibromo-3-chloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| 1,2 5.5.6 o dimolopropano | . 129/ | 1111200 | · | · | · | · | | |
| 1,2,4-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| Haveablasch (P | .4 0 | T14000 | # | # | # | # | | |
| Hexachlorobutadiene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | <1 # | | |
| tert-Amyl methyl ether (TAME) | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| , , , , , | | | # | # | # | # | | |
| Naphthalene | <1 µg/l | TM208 | <1 | <1 | <1 " | <1 " | | |
| 1,2,3-Trichlorobenzene | ~1··~!! | TM208 | # <1 | # <1 | # <1 | # <1 | | |
| 1,2,3-11101110100001120110 | <1 µg/l | I IVI∠Uδ | <1 # | <1 # | <1 # | <1 # | | |
| 1,3,5-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | <1 | | |
| | | | | | | | | |



 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

Table of Results - Appendix

| lable of Results - Appendix | | | | | | | |
|-----------------------------|---|---|--|--|--|--|--|
| Method No | Reference | Description | | | | | |
| SUB | | Subcontracted Test | | | | | |
| TM022 | Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872 | Determination of total suspended solids in waters | | | | | |
| TM043 | Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984 | Determination of alkalinity in aqueous samples | | | | | |
| TM045 | MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130 | Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids | | | | | |
| TM046 | Method 4500G, AWWA/APHA, 20th Ed., 1999 | Measurement of Dissolved Oxygen by Oxygen Meter | | | | | |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water | | | | | |
| TM099 | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984 | Determination of Ammonium in Water Samples using the Kone Analyser | | | | | |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser | | | | | |
| TM107 | ISO 6060-1989 | Determination of Chemical Oxygen Demand using COD Dr Lange Kit | | | | | |
| TM120 | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970 | Determination of Electrical Conductivity using a Conductivity Meter | | | | | |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS | | | | | |
| TM172 | Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria | EPH in Waters | | | | | |
| TM176 | EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of SVOCs in Water by GCMS | | | | | |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry | | | | | |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers | | | | | |
| TM197 | Modified: US EPA Method 8082.EA Method 174 and 5109631 | Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters | | | | | |
| TM208 | Modified: US EPA Method 8260b & 624 | Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters | | | | | |
| TM227 | Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500. | Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate | | | | | |
| TM256 | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter | | | | | |
| TM284 | | | | | | | |
| TM328 | | | | | | | |
| TM343 | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of Selected Pesticides (Suite I) in Liquids by GCMS | | | | | |
| TM344 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite II) by GCMS | | | | | |
| TM345 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite III) by GCMS | | | | | |
| TM411 | Acid_Herbs_GCMS | Acid Herbs in Water by GCMS | | | | | |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Validated

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

Test Completion Dates

| | _ | 163 | t Com | pietioi |
|-------------------------------------|--------------|---------------|---------------|---------------|
| Lab Sample No(s) | 22408528 | 22408517 | 22408488 | 22408504 |
| Customer Sample Ref. | Holy Well | MH-1 | SW1 | SW2 |
| AGS Ref. | | | | |
| Depth | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 |
| Туре | Ground Water | Land Leachate | Surface Water | Surface Water |
| Acid Herbicides by GCMS | 07-Jul-2020 | | 07-Jul-2020 | 07-Jul-2020 |
| Alkalinity as CaCO3 | 07-Jul-2020 | | | |
| Ammoniacal Nitrogen | | 06-Jul-2020 | | 06-Aug-2020 |
| Ammonium Low | 06-Jul-2020 | 06-Jul-2020 | 08-Jul-2020 | 19-Aug-2020 |
| Anions by Kone (w) | 04-Jul-2020 | 04-Jul-2020 | 05-Jul-2020 | 05-Jul-2020 |
| BOD True Total | | 08-Jul-2020 | 08-Jul-2020 | 08-Jul-2020 |
| COD Unfiltered | | 06-Jul-2020 | 06-Jul-2020 | 06-Jul-2020 |
| Coliforms (W) | 06-Jul-2020 | | | |
| Conductivity (at 20 deg.C) | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 |
| Cyanide Comp/Free/Total/Thiocyanate | 07-Jul-2020 | 07-Jul-2020 | 07-Jul-2020 | 07-Jul-2020 |
| Dissolved Metals by ICP-MS | 08-Jul-2020 | 08-Jul-2020 | 08-Jul-2020 | 08-Jul-2020 |
| Dissolved Oxygen by Probe | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 |
| Fluoride | 07-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 | 07-Jul-2020 |
| Mercury Dissolved | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 |
| Mineral Oil C10-40 Aqueous (W) | 07-Jul-2020 | 07-Jul-2020 | 07-Jul-2020 | 07-Jul-2020 |
| Nitrite by Kone (w) | | 03-Jul-2020 | | |
| Organotins in Aqueous Samples | | 06-Jul-2020 | | |
| PCB Congeners - Aqueous (W) | 09-Jul-2020 | 08-Jul-2020 | 08-Jul-2020 | 09-Jul-2020 |
| Pesticides (Suite I) by GCMS | 09-Jul-2020 | 09-Jul-2020 | 09-Jul-2020 | 09-Jul-2020 |
| Pesticides (Suite II) by GCMS | 07-Jul-2020 | 07-Jul-2020 | 07-Jul-2020 | 07-Jul-2020 |
| Pesticides (Suite III) by GCMS | 09-Jul-2020 | 09-Jul-2020 | 09-Jul-2020 | 09-Jul-2020 |
| pH Value | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 |
| Phosphate by Kone (w) | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 | 03-Jul-2020 |
| Silicon Dissolved by ICP-OES | | 10-Jul-2020 | | |
| Suspended Solids | | 08-Jul-2020 | 08-Jul-2020 | 08-Jul-2020 |
| SVOC MS (W) - Aqueous | 05-Jul-2020 | 05-Jul-2020 | 05-Jul-2020 | 08-Jul-2020 |
| Total Organic and Inorganic Carbon | 04-Jul-2020 | 04-Jul-2020 | | |
| VOC MS (W) | 06-Jul-2020 | 06-Jul-2020 | 06-Jul-2020 | 06-Jul-2020 |





City Analysts Limited, Pigeon House Road, Ringsend, Dublin 4.

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www.cityanalysts.ie

Customer

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK
CH5 3US

Certificate Of Analysis

Job Number: 20-79340

Issue Number: 1

Report Date: 2 July 2020

Site: Galway Historic Landfills

PO Number: Not Supplied

Date Samples Received: 01/07/2020

Please find attached the results for the samples received at our laboratory on 01/07/2020.

Should you have any queries regarding the report or require any further services, we would be happy to discuss your requirements. For additional information about the company please log-on to our website at the above address.

Thank you for choosing City Analysts Limited. We look forward to assisting you again.

Authorised By: Authorised Date: 2 July 2020

Debbie Kelly

Laboratory Supervisor

Notes are not INAB accredited

Results relate only to the items tested.

Information on methods of analysis and uncertainty of measurement is available on request.

Any opinions or interpretations indicated are outside the scope of our INAB accreditation.

This test report shall not be reproduced except in full or with written approval of City Analysts Limited.

Page 1 of 5 Template: 1146 Revision: 018





Report Reference: 20-79340

Report Version: 1

City Analysts Limited, Pigeon House Road, Ringsend, Dublin 4.

Tel: (01) 613 6003 Fax: (01) 613 6008

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Certificate Of Analysis

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK

Customer

CH5 3US

Site:

Galway Historic Landfills

Sample Description:5A TuamDate of Sampling:01/07/2020Sample Type:GroundDate Sample Received:01/07/2020

Lab Reference Number: 517821

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 01/07/2020 | Coliforms | 913.9 | MPN/100ml | - |
| D/D3221# | 01/07/2020 | Faecal Coliforms | 12 | cfu/100ml | - |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers.

TVC - Total viable count





City Analysts Limited, Pigeon House Road, Ringsend, Dublin 4.

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Email:

reports@cityanalysts.ie

www.cityanalysts.ie

Certificate Of Analysis

Customer Services ALS Life Sciences Hawarden Business Park Manor Lane

Hawarden, Deeside

UK CH5 3US

Customer

Report Reference: 20-79340

Report Version: 1

Site: Galway Historic Landfills

Sample Description:RC2 TuamDate of Sampling:01/07/2020Sample Type:GroundDate Sample Received:01/07/2020

Lab Reference Number: 517822

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|----------|-----------|--------------------------------------|
| D/D1201# | 01/07/2020 | Coliforms | > 2419.6 | MPN/100ml | 1 |
| D/D3221# | 01/07/2020 | Faecal Coliforms | <1 | cfu/100ml | - |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers.

TVC - Total viable count





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Certificate Of Analysis

Customer Services

Customer

ALS Life Sciences Hawarden Business Park Manor Lane Hawarden, Deeside

UK CH5 3US Report Reference: 20-79340

Report Version: 1

Site: Galway Historic Landfills

Sample Description:RC3 TuamDate of Sampling:01/07/2020Sample Type:GroundDate Sample Received:01/07/2020

Lab Reference Number: 517823

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|----------|-----------|--------------------------------------|
| D/D1201# | 01/07/2020 | Coliforms | > 2419.6 | MPN/100ml | - |
| D/D3221# | 01/07/2020 | Faecal Coliforms | < 100 | cfu/100ml | - |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

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TVC - Total viable count





Report Reference: 20-79340

Report Version: 1

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Certificate Of Analysis

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK

Customer

CH5 3US

Site: Galway Historic Landfills

Sample Description:Holywell GortDate of Sampling:01/07/2020Sample Type:GroundDate Sample Received:01/07/2020

Lab Reference Number: 517824

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|----------|-----------|--------------------------------------|
| D/D1201# | 01/07/2020 | Coliforms | > 2419.6 | MPN/100ml | 1 |
| D/D3221# | 01/07/2020 | Faecal Coliforms | 10 | cfu/100ml | - |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers.

TVC - Total viable count



 SDG:
 200702-50
 Client Reference:
 P2282
 Report Number:
 563812

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562070

Appendix

General

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised

| 1 | Container with Headspace provided for volatiles analysis |
|---|---|
| 2 | Incorrect container received |
| 3 | Deviation from method |
| § | Sampled on date not provided |
| • | Sample holding time exceeded in laboratory |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbe stos Type | Common Name | | |
|---------------------------|----------------|--|--|
| Chrysof le | White Asbests | | |
| Amosite | BrownAsbests | | |
| Cro d dolite | Blue Asbe stos | | |
| Fibrous Act nolite | - | | |
| Fib to us Anthop hyll ite | - | | |
| Fibrous Tremolite | - | | |

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017).

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



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> Tel: (01244) 528700 Fax: (01244) 528701

CH5 3US

email: haward encustomers ervices@alsglobal.com

Website: www.alsenvironmental.co.uk

Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:09 August 2020Customer:Fehily TimoneySample Delivery Group (SDG):200731-85Your Reference:P2282Location:Gort LandfillReport No:562378

We received 2 samples on Friday July 31, 2020 and 2 of these samples were scheduled for analysis which was completed on Sunday August 09, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager









P2282 SDG: 200731-85 Client Reference: Report Number: 562378 Gort Landfill Z2189 Superseded Report: Location: Order Number:

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 22583238 | SW1 | | 0.00 - 0.00 | 30/07/2020 |
| 22583260 | SW2 | | 0.00 - 0.00 | 30/07/2020 |

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining

a temperature of (5±3)°C.

16.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

562378

CERTIFICATE OF ANALYSIS

SDG: 200731-85 Client Reference: P2282 Report Number: Gort Landfill Z2189 Superseded Report: Location: Order Number: Results Legend 22583238 22583260 Lab Sample No(s) X Test No Determination Possible Customer Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water 0.00-0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent - 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) Vial (ALE297) H2SO4 (ALE244) NaOH (ALE245) H2SO4 (ALE244) NaOH (ALE245) DW - Drinking Water Non-regulatory 500ml Plastic (ALE208) ۷ial UNL - Unspecified Liquid (ALE297) SL - Sludge Container G - Gas OTH - Other Sample Type WS Acid Herbicides by GCMS All NDPs: 0 Tests: 2 Х Х Ammonium Low All NDPs: 0 Tests: 2 Χ Χ Anions by Kone (w) All NDPs: 0 Tests: 2 Χ X BOD True Total All NDPs: 0 Tests: 2 X X COD Unfiltered All NDPs: 0 Tests: 2 Х Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 2 Х Х Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 2 Χ Х Dissolved Metals by ICP-MS All NDPs: 0 Tests: 2 Χ Х Dissolved Oxygen by Probe All NDPs: 0 Tests: 2 Χ Χ Fluoride All NDPs: 0 Tests: 2 Χ X Mercury Dissolved All NDPs: 0 Tests: 2 X Х Mineral Oil C10-40 Aqueous (W) All NDPs: 0 Tests: 2 X Χ PCB Congeners - Aqueous (W) All NDPs: 0 Tests: 2 Х Х Pesticides (Suite I) by GCMS All NDPs: 0 Tests: 2 Х Х

Pesticides (Suite II) by GCMS

All

NDPs: 0 Tests: 2

X

X

Validated

562378

CERTIFICATE OF ANALYSIS

ALS

P2282 SDG: 200731-85 Client Reference: Report Number: Location: Gort Landfill Z2189 Superseded Report: Order Number: Results Legend 22583238 22583260 Lab Sample No(s) X Test No Determination Possible Customer SW2 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00-PR - Process Water 0.00 - 0.00 SA - Saline Water Depth (m) - 0.00 TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5I glass bottle (ALE227) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.51 glass bottle (ALE227) Vial (ALE297) H2SO4 (ALE244) H2SO4 (ALE244) NaOH (ALE245) NaOH (ALE245) DW - Drinking Water Non-regulatory Vial (ALE297) UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other Sample Type WS Pesticides (Suite III) by GCMS All NDPs: 0 Tests: 2 Χ X pH Value All NDPs: 0 Tests: 2 X X Phosphate by Kone (w) All NDPs: 0 Tests: 2 X Х Suspended Solids All NDPs: 0 Tests: 2 X Х SVOC MS (W) - Aqueous All NDPs: 0 Tests: 2 X Х VOC MS (W) All NDPs: 0 Tests: 2

Χ

Χ

ALS

SDG: 200731-85 Location: Gort Landfill Client Reference: Order Number: P2282 Z2189 Report Number: Superseded Report: 562378

| Recults Legend | | 0.101.0.1 | | | - | | |
|--|----------------|--|---|---|---|--|--|
| Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. | | Customer Sample Ref. | SW1 | SW2 | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | t for | Depth (m) Sample Type Date Sampled | 0.00 - 0.00 Surface Water (SW) 30/07/2020 | 0.00 - 0.00 Surface Water (SW) 30/07/2020 | | | |
| accreditation status. ** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi | | Sample Time | | | | | |
| compounds within samples aren't corrected to recovery | | Date Received SDG Ref | 31/07/2020 200731-85 | 31/07/2020 200731-85 | | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22583238 | 22583260 | | | |
| Component | LOD/Units | Method | | 0.05 | | | |
| Suspended solids, Total | <2 mg/l | TM022 | <2 | _ | # | | |
| BOD, unfiltered | <1 mg/l | TM045 | <1 | < 1 | # | | |
| Oxygen, dissolved | <0.3 mg/l | TM046 | 9.94 | 10.3 | | | |
| Ammoniacal Nitrogen as N (low level) | <0.01 mg/l | TM099 | 0.0229 | 0.0246 | # | | |
| Fluoride | <0.5 mg/l | TM104 | <0.5 | <0.5 | | | |
| COD, unfiltered | <7 mg/l | TM107 | 42.1 | 43.5 # | # | | |
| Conductivity @ 20 deg.C | <0.02 mS/cm | TM120 | 0.155 | 0.145 | # | | |
| Arsenic (diss.filt) | <0.5 µg/l | TM152 | <0.5 | <0.5 | | | |
| Barium (diss.filt) | <0.2 µg/l | TM152 | 42.5 | 42.6 | | | |
| Cadmium (diss.filt) | <0.08 µg/l | TM152 | <0.08 | <0.08 | | | |
| Chromium (diss.filt) | <1 µg/l | TM152 | <1 | 2# 2; | | | |
| Copper (diss.filt) | <0.3 µg/l | TM152 | 0.92 | 2# 2; | | | |
| Lead (diss.filt) | <0.2 µg/l | TM152 | <0.2 | 0.442 | | | |
| Manganese (diss.filt) | <3 µg/l | TM152 | 3.81 | 8.19 | | | |
| Nickel (diss.filt) | <0.4 µg/l | TM152 | 1.09 | 1.03 | | | |
| Phosphorus (diss.filt) | <10 µg/l | TM152 | <10 | 2# 2: | | | |
| Selenium (diss.filt) | <1 µg/l | TM152 | <1 | 2# 2; | | | |
| Thallium (diss.filt) | <2 µg/l | TM152 | <2 | 2# 2: | | | |
| Zinc (diss.filt) | <1 µg/l | TM152 | 1.7 | 2.81 | | | |
| Sodium (Dis.Filt) | <0.076 mg/l | TM152 | 10 | 2# 2; | | | |
| Magnesium (Dis.Filt) | <0.036 mg/l | TM152 | 2.59 | 2.67 | | | |
| Potassium (Dis.Filt) | <0.2 mg/l | TM152 | 1.03 | 2.# 2: | | | |
| Calcium (Dis.Filt) | <0.2 mg/l | TM152 | 20.6 | 2# 2: | | | |
| Iron (Dis.Filt) | <0.019 mg/l | TM152 | 0.183 | 0.187 | | | |
| Mineral oil >C10 C40 (aq) | <100 µg/l | TM172 | <100 | <100 | # | | |
| Mercury (diss.filt) | <0.01 µg/l | TM183 | <0.01 | <0.01 | | | |
| Phosphate (Ortho as PO4) | <0.05 mg/l | TM184 | <0.05 | 2 <0.05 | | | |
| Sulphate | <2 mg/l | TM184 | <2 | <2 | # | | |
| Chloride | <2 mg/l | TM184 | 19.6 | 19.1 | # | | |
| Sulphate (soluble) as S | <1 mg/l | TM184 | <1 | <1 | # | | |
| PCB congener 28 | <0.015 µg/l | TM197 | <0.015 | # <0.015 | # | | |
| PCB congener 52 | <0.015 µg/l | TM197 | <0.015 | <0.015 | | | |
| PCB congener 101 | <0.015 µg/l | TM197 | <0.015 | <0.015 | | | |
| | | | | | | | |



200731-85 Gort Landfill SDG: Client Reference: Location:

P2282 Z2189 Order Number:

Report Number: Superseded Report: 562378

| | Results Legend | | Contamos Samala Daf | | | | |
|-----------------|---|-----------------------------|------------------------------|---------------------------|-----------------------|------|--|
| # M | ISO17025 accredited. mCERTS accredited. | | Customer Sample Ref. | SW1 | SW2 | | |
| aq diss.filt | Aqueous / settled sample. Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | | |
| tot.unfilt | Total / unfiltered sample. Subcontracted - refer to subcontractor report | for | Sample Type | Surface Water (SW) | Surface Water (SW) | | |
| | accreditation status. % recovery of the surrogate standard to check | | Date Sampled Sample Time | 30/07/2020 | 30/07/2020 | | |
| | efficiency of the method. The results of individ compounds within samples aren't corrected for | lual | Date Received | 31/07/2020 | 31/07/2020 | | |
| (F) | recovery | i tile | SDG Ref Lab Sample No.(s) | 200731-85 22583238 | 200731-85 22583260 | | |
| (F) 1-3+§@ | Trigger breach confirmed Sample deviation (see appendix) | | AGS Reference | 22000200 | 22300233 | | |
| PCB co | nent ngener 118 | LOD/Units <0.015 μg/ | | <0.015 | <0.015 | | |
| 1 00 00 | ngener 110 | -0.010 μg/ | 1111137 | 10.010 | 10.010 | | |
| PCB co | ngener 138 | <0.015 µg/ | /I TM197 | <0.015 | <0.015 | | |
| | | | | | | | |
| PCB co | ngener 153 | <0.015 µg/ | /I TM197 | <0.015 | <0.015 | | |
| PCB co | ngener 180 | <0.015 µg/ | /I TM197 | <0.015 | <0.015 | | |
| | | | | | | | |
| Sum of | detected EC7 PCB's | <0.105 µg/ | /I TM197 | <0.105 | <0.105 | | |
| Cyanide | Total | <0.05 mg/l | I TM227 | <0.05 | <0.05 | | |
| Cyanius | s, Total | <0.05 mg/i | I I IVIZZI | \0.05 | <0.05 | | |
| рН | | <1 pH Unit | s TM256 | 7.52 | 7.52 | | |
| | | | | # | # | | |
| Triflural | n | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| alpha-H | CH | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| | - | 0.0 i pg/i | | | | | |
| gamma | -HCH (Lindane) | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| Uant- 1 | alor | ۰٬۰۰۸ ۰۰۰ ۳ | I TM343 | <0.01 | <0.01 | | |
| Heptacl | nior | <0.01 µg/l | I IM343 | <0.01 | <0.01 | | |
| Aldrin | | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| | | | | | | | |
| beta-H0 | CH | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| Isodrin | | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| ISOUIIII | | <0.01 μg/i | 1 11/1040 | \0.01 | <0.01 | | |
| delta-H | СН | <0.01 µg/l | TM343 | <0.02 | <0.02 | | |
| | | | | | | | |
| Heptach | nlor epoxide | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| o,p'-DD | | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| - 4 | | | | | | | |
| Endosu | lphan I | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| tropo C | nlordane | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| แลกร-0 | liordane | ~0.01 μg/i | 1 1111040 | \0.01 | ~ 0.01 | | |
| cis-Chlo | ordane | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| | | | | | | | |
| p,p'-DD | E | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| Dieldrin | | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| | | | | | | | |
| o,p'-DD | D (TDE) | <0.01 µg/l | TM343 | <0.01 | <0.01 | | |
| Endrin | | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| LIIUIIII | | -ν.ν ι μg/ι | I IVIO43 | \U.U I | \0.01 | | |
| o,p'-DD | Т | <0.01 µg/l | I TM343 | <0.04 | <0.04 | | |
| | D (TDF) | | | | | | |
| p,p'-DD | D (TDE) | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| Endosu | lphan II | <0.02 µg/l | I TM343 | <0.02 | <0.02 | | |
| | | | | | | | |
| p,p'-DD | Т | <0.01 µg/l | I TM343 | <0.07 | <0.07 | | |
| 0 n' Ma | thoxychlor | <0.01 µg/l | I TM343 | <0.04 | <0.04 | | |
| o,p-ivie | aloxyollioi | -ν.ν ι μg/ι | I IVIO43 | \ U.U 4 | \U.U 4 | | |
| p,p'-Me | thoxychlor | <0.01 µg/l | TM343 | <0.07 | <0.07 | | |
| | | | | | | | |
| Endosu | lphan Sulphate | <0.02 µg/l | I TM343 | <0.04 | <0.04 | | |
| Permet | nrin I | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| 5 | <u> </u> | 0.0 i pg/i | | | | | |
| Permet | nrin II | <0.01 µg/l | I TM343 | <0.01 | <0.01 | | |
| | | | | | | | |



| # | Results Legend ISO17025 accredited. | | Customer Sample Ref. | SW1 | SW2 | | |
|------------------------------------|---|-------------------------|--|---|---|--|--|
| M aq diss.filt tot.unfilt | mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted - refer to subcontractor report fr | or | Depth (m) Sample Type Date Sampled | 0.00 - 0.00 Surface Water (SW) 30/07/2020 | 0.00 - 0.00 Surface Water (SW) 30/07/2020 | | |
| ** | accreditation status. % recovery of the surrogate standard to check efficiency of the method. The results of individu | | Sample Time Date Received | 31/07/2020 | 31/07/2020 | | |
| | compounds within samples aren't corrected for recovery | | SDG Ref | 200731-85 22583238 | 200731-85 22583260 | | |
| 1-3 + §@ | Trigger breach confirmed Sample deviation (see appendix) | 100/11/1/ | Lab Sample No.(s) AGS Reference | 22000200 | 22500200 | | |
| Compor 1,3,5-Tric | nent chlorobenzene | LOD/Units <0.01 µg/l | | <0.01 | <0.01 | | |
| Hexachlo | probutadiene | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| | | | | | | | |
| 1,2,4-1rid | chlorobenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| 1,2,3-Tric | chlorobenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Dichlorvo | os | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Dichlobe | nil | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Mevinpho | os | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Tecnaze | ne | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Hexachlo | probenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| | | | | | | | |
| | ı-S-methyl | <0.01 µg/l | | <0.01 | <0.01 | | |
| Phorate | | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Diazinon | | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Triallate | | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Atrazine | | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Simazine | 3 | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Disulfoto | n | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Propetan | nphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Chlorpyri | phos-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Dimethoa | ate | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Pirimipho | os-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Chlorpyri | phos | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Methyl P | arathion | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Malathio | | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Fenthion | | <0.01 µg/l | | <0.01 | <0.01 | | |
| Fenitroth | | <0.01 μg/l | | <0.01 | <0.01 | | |
| Triadime | | | | <0.01 | <0.01 | | |
| | | <0.01 µg/l | | | | | |
| Pendime | thalin | <0.01 µg/l | | <0.01 | <0.01 | | |
| Parathior | 1 | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Chlorfen | vinphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| trans-Chi | lordane | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| cis-Chlor | dane | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| Ethion | | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |
| | enothion | <0.01 µg/l | TM344 | <0.01 | <0.01 | | |



| # ISO17025 accredited. M mCERTS accredited. | | Customer Sample Ref. | SW1 | SW2 | | | |
|---|------------|------------------------------------|----------------------------------|----------------------------------|---|--|--|
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor reg | port for | Sample Type Date Sampled | Surface Water (SW) 30/07/2020 | Surface Water (SW) 30/07/2020 | | | |
| accreditation status. ** % recovery of the surrogate standard to c efficiency of the method. The results of in | | Sample Time | | | | | |
| compounds within samples aren't correct recovery | | Date Received SDG Ref | 31/07/2020 200731-85 | 31/07/2020 200731-85 | | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22583238 | 22583260 | | | |
| Component | LOD/Units | Method | | | | | |
| Triazophos | <0.01 µg/l | TM344 | <0.01 | <0.01 | | | |
| Phosalone | <0.01 µg/l | TM344 | <0.01 | <0.01 | | | |
| Azinphos methyl | <0.02 µg/l | TM344 | <0.02 | <0.02 | | | |
| Azinphos ethyl | <0.02 µg/l | TM344 | <0.02 | <0.02 | | | |
| Etridiazole | <0.01 µg/l | TM345 | <0.02 | <0.02 | | | |
| Pentachlorobenzene | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Propachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Quintozene (PCNB) | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Omethoate | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Propazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Propyzamide | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Alachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Prometryn | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Telodrin | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Terbutryn | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Chlorothalonil | <0.01 µg/l | TM345 | <0.03 | <0.03 | | | |
| Etrimphos | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Metazachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Cyanazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Trietazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Coumaphos | <0.01 µg/l | TM345 | <0.01 | <0.01 | | | |
| Phosphamidon I | <0.01 µg/l | | <0.02 | <0.02 | | | |
| Phosphamidon II | <0.01 µg/l | TM345 | <0.02 | <0.02 | | | |
| Dinitro-o-cresol | <0.1 µg/l | TM411 | <0.1 | <0.1 | | | |
| Clopyralid | <0.04 µg/l | TM411 | <0.04 | <0.04 | | | |
| MCPA | <0.05 µg/l | TM411 | <0.05 | <0.05 | | | |
| Mecoprop | <0.04 µg/l | TM411 | <0.04 | <0.04 | | | |
| Dicamba | <0.04 µg/l | TM411 | <0.04 | <0.04 | | | |
| МСРВ | <0.05 µg/l | TM411 | <0.05 | <0.05 | | | |
| 2,4-DB | <0.1 µg/l | TM411 | <0.1 | <0.1 | | | |
| 2,3,6-Trichlorobenzoic acid | <0.05 µg/l | TM411 | <0.05 | <0.05 | | | |
| Dichlorprop | <0.1 µg/l | TM411 | <0.1 | <0.1 | | | |
| Triclopyr | <0.05 µg/l | TM411 | <0.05 | <0.05 | | | |
| | | | | | l | | |



| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | SW1 | SW2 | | |
|--|------------------------|------------------------------|-----------------------------------|-----------------------------------|--|--|
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | | |
| Subcontracted - refer to subcontractor report accreditation status. | | Date Sampled | 30/07/2020 | 30/07/2020 | | |
| ** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi | idual | Sample Time Date Received | 31/07/2020 | 31/07/2020 | | |
| compounds within samples aren't corrected f recovery (F) Trigger breach confirmed | or the | SDG Ref Lab Sample No.(s) | 200731-85 22583238 | 200731-85 22583260 | | |
| 1-3+§@ Sample deviation (see appendix) | LODULIA | AGS Reference | | | | |
| Component Fenoprop (Silvex) | LOD/Units <0.1 μg/l | Method TM411 | <0.1 | <0.1 | | |
| | | | | | | |
| 2,4-Dichlorophenoxyacetic acid | <0.05 µg/l | TM411 | <0.05 | <0.05 | | |
| 2,4,5-Trichlorophenoxyacetic | <0.05 µg/l | TM411 | <0.05 | <0.05 | | |
| acid | | | | | | |
| Bromoxynil | <0.04 µg/l | TM411 | <0.04 | <0.04 | | |
| Benazolin | <0.04 µg/l | TM411 | <0.04 | <0.04 | | |
| | | | | | | |
| loxynil | <0.05 µg/l | TM411 | <0.05 | <0.05 | | |
| Pentachlorophenol | <0.04 µg/l | TM411 | <0.04 | <0.04 | | |
| | | | | | | |
| Fluoroxypyr | <0.1 µg/l | TM411 | <0.1 | <0.1 | | |
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| SVOC MS (V | /) - Aqueous |
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|------------|--------------|

| SVOC MS (W) - Aqueous Results Legend | , | | | | | |
|---|----------------------|--|--|--|--|--|
| # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report f | | Customer Sample Ref. Depth (m) Sample Type Date Sampled | SW1 0.00 - 0.00 Surface Water (SW) 30/07/2020 | SW2 0.00 - 0.00 Surface Water (SW) 30/07/2020 | | |
| accreditation status. ** % recovery of the surrogate standard to check efficiency of the method. The results of individ compounds within samples aren't corrected fo | lual | Sample Time Date Received SDG Ref | 31/07/2020 200731-85 | 31/07/2020 200731-85 | | |
| recovery (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | I OD/II-it- | Lab Sample No.(s) AGS Reference | 22583238 | 22583260 | | |
| 1,2,4-Trichlorobenzene (aq) | LOD/Units <1 μg/l | Method TM176 | <8 # | <10 # | | |
| 1,2-Dichlorobenzene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 1,3-Dichlorobenzene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 1,4-Dichlorobenzene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2,4,5-Trichlorophenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2,4,6-Trichlorophenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2,4-Dichlorophenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2,4-Dimethylphenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2,4-Dinitrotoluene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2,6-Dinitrotoluene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2-Chloronaphthalene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2-Chlorophenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2-Methylnaphthalene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2-Methylphenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2-Nitroaniline (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 2-Nitrophenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 3-Nitroaniline (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 4-Bromophenylphenylether (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 4-Chloro-3-methylphenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 4-Chloroaniline (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| 4-Chlorophenylphenylether (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 4-Methylphenol (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 4-Nitroaniline (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| 4-Nitrophenol (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| Azobenzene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| Acenaphthylene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| Acenaphthene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| Anthracene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| bis(2-Chloroethyl)ether (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| bis(2-Chloroethoxy)methane (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| bis(2-Ethylhexyl) phthalate (aq) | <2 µg/l | TM176 | <16 # | <20 # | | |
| Butylbenzyl phthalate (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| Benzo(a)anthracene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |

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 SDG:
 200731-85
 Client Reference:
 P2282
 Report Number:
 562378

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

| SVOC MS (W) - Aqueous | 3 | | | | | |
|---|-----------|------------------------------------|--|-----------------------------------|--|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | SW1 | SW2 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | | |
| * Subcontracted - refer to subcontractor report accreditation status. | | Date Sampled | 30/07/2020 | 30/07/2020 | | |
| ** % recovery of the surrogate standard to check efficiency of the method. The results of individe | | Sample Time Date Received | 31/07/2020 | 31/07/2020 | | |
| compounds within samples aren't corrected for recovery | or the | SDG Ref | 200731-85 | 200731-85 | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22583238 | 22583260 | | |
| Component | LOD/Units | | | | | |
| Benzo(b)fluoranthene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| 2 (1)2 | 4 0 | 71470 | # | # | | |
| Benzo(k)fluoranthene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| Benzo(a)pyrene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| Delizo(a)pyrelie (aq) | ~1 μg/1 | 110170 | -0 # | 10 # | | |
| Benzo(g,h,i)perylene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| (G) //I / (I) | , , | | # | # | | |
| Carbazole (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | # | # | | |
| Chrysene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| Dib and from (an) | 44 // | TM470 | # | # | | |
| Dibenzofuran (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| n-Dibutyl phthalate (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| s. s.g. piniaio (uq) | μg/i | 1 | # | # | | |
| Diethyl phthalate (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | # | # | | |
| Dibenzo(a,h)anthracene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| 2 | | = | # | # | | |
| Dimethyl phthalate (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| n-Dioctyl phthalate (aq) | <5 µg/l | TM176 | # <40 | * | | |
| 11-Diociyi pritrialate (aq) | -5 μg/i | 111170 | # | # | | |
| Fluoranthene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| (-1/ | 13 | | # | # | | |
| Fluorene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | # | # | | |
| Hexachlorobenzene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | .4 // | T14470 | # | # | | |
| Hexachlorobutadiene (aq) | <1 µg/l | TM176 | <8 # | <10 # | | |
| Pentachlorophenol (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| · omaomorophonoi (aq) | . 1297 | | , and the second | | | |
| Phenol (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | | | | |
| n-Nitroso-n-dipropylamine (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| Here also all and the second | 44 // | TM176 | * | * | | |
| Hexachloroethane (aq) | <1 µg/l | 1101176 | ~ 0 # | ×10 # | | |
| Nitrobenzene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| (-1) | 13 | | # | # | | |
| Naphthalene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | # | # | | |
| Isophorone (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| Havashlaras de | a4 : 0 | T84470 | # | # -10 | | |
| Hexachlorocyclopentadiene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| Phenanthrene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | # | # | | |
| Indeno(1,2,3-cd)pyrene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | | # | # | | |
| Pyrene (aq) | <1 µg/l | TM176 | <8 | <10 | | |
| | | 1 | # | # | | |
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| VOC MS (W) Results Legend | | | | | | | |
|---|-----------|--|--|--|---|--|--|
| # ISO17025 accredited. M mCERT's accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt total / unfiltered sample. Subcontracted - refer to subcontractor report | | Customer Sample Ref. Depth (m) Sample Type | SW1 0.00 - 0.00 Surface Water (SW) | SW2 0.00 - 0.00 Surface Water (SW) | | | |
| accreditation status. ** % recovery of the surrogate standard to check | | Date Sampled Sample Time | 30/07/2020 | 30/07/2020 | | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for | dual | Date Received SDG Ref | 31/07/2020 200731-85 | 31/07/2020 200731-85 | | | |
| recovery (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22583238 | 22583260 | | | |
| Component | LOD/Units | Method | | | | | |
| Dibromofluoromethane** | % | TM208 | 107 | 105 | | | |
| Toluene-d8** | % | TM208 | 96.8 | 97.4 | | | |
| 4-Bromofluorobenzene** | % | TM208 | 100 | 101 | | | |
| Dichlorodifluoromethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Chloromethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Vinyl chloride | <1 µg/l | TM208 | <1 # | | # | | |
| Bromomethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Chloroethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Trichlorofluoromethane | <1 µg/l | TM208 | <1 # | | # | | |
| 1,1-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Carbon disulphide | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Dichloromethane | <3 µg/l | TM208 | <3 # | | # | | |
| Methyl tertiary butyl ether (MTBE) | <1 µg/l | TM208 | <1 # | <1 | # | | |
| trans-1,2-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,1-Dichloroethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| cis-1,2-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 2,2-Dichloropropane | <1 µg/l | TM208 | <1 | <1 | | | |
| Bromochloromethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Chloroform | <1 µg/l | TM208 | <1 # | | # | | |
| 1,1,1-Trichloroethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,1-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Carbontetrachloride | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,2-Dichloroethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Benzene | <1 µg/l | TM208 | <1 # | | # | | |
| Trichloroethene | <1 µg/l | TM208 | <1 # | | # | | |
| 1,2-Dichloropropane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Dibromomethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Bromodichloromethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| cis-1,3-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Toluene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| trans-1,3-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,1,2-Trichloroethane | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,3-Dichloropropane | <1 µg/l | TM208 | <1 # | <1 | # | | |

200731-85 Gort Landfill P2282 Z2189 Report Number: Superseded Report: SDG: Client Reference: 562378 Location: Order Number:

| VOC MS (W) | | | | | | | |
|--|-------------|------------------------------------|-----------------------------------|-----------------------------------|----------|--|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | SW1 | SW2 | | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Surface Water (SW) | 0.00 - 0.00 Surface Water (SW) | | | |
| Subcontracted - refer to subcontractor repo accreditation status. | ort for | Date Sampled | 30/07/2020 | 30/07/2020 | | | |
| ** % recovery of the surrogate standard to che efficiency of the method. The results of indi | | Sample Time Date Received | 31/07/2020 | 31/07/2020 | | | |
| compounds within samples aren't corrected recovery | | SDG Ref | 200731-85 | 200731-85 | | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22583238 | 22583260 | | | |
| Component | LOD/Units | | | | | | |
| Tetrachloroethene | <1 µg/l | TM208 | <1 | <1 | \neg | | |
| | | | # | | # | | |
| Dibromochloromethane | <1 µg/l | TM208 | <1 | <1 | | | |
| 1.2 Dibromoothono | <1.ug/l | TM208 | # <1 | <1 | # | | |
| 1,2-Dibromoethane | <1 µg/l | 1 1/1/2/00 | <u> </u> | | # | | |
| Chlorobenzene | <1 µg/l | TM208 | <1 | <1 | | | |
| | . 1-3 | | # | | # | | |
| 1,1,1,2-Tetrachloroethane | <1 µg/l | TM208 | <1 | <1 | \neg | | |
| | | | # | | # | | |
| Ethylbenzene | <1 µg/l | TM208 | <1 | <1 | | | |
| V | -4 // | T14000 | # | | # | | |
| m,p-Xylene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| o-Xylene | <1 µg/l | TM208 | <1 | <1 | # | | |
| 5.4jono | 1 µg/1 | 1 1412-00 | - " | | # | | |
| Styrene | <1 µg/l | TM208 | <1 | <1 | \dashv | | |
| · | | | # | | # | | |
| Bromoform | <1 µg/l | TM208 | <1 | <1 | | | |
| | | | # | | # | | |
| Isopropylbenzene | <1 µg/l | TM208 | <1 " | <1 | | | |
| 1,1,2,2-Tetrachloroethane | <1 µg/l | TM208 | # <1 | <1 | # | | |
| 1,1,2,2-160 acilioroetilane | ν μ μ μ μ μ | 1101200 | # | | # | | |
| 1,2,3-Trichloropropane | <1 µg/l | TM208 | <1 | <1 | | | |
| | | | # | | # | | |
| Bromobenzene | <1 µg/l | TM208 | <1 | <1 | | | |
| | | | # | | # | | |
| Propylbenzene | <1 µg/l | TM208 | <1 | <1 | ,, | | |
| 2-Chlorotoluene | <1 µg/l | TM208 | # <1 | <1 | # | | |
| 2 Officiologic | 1 µg/1 | 11/1200 | # | | # | | |
| 1,3,5-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | ╛ | | |
| | | | # | | # | | |
| 4-Chlorotoluene | <1 µg/l | TM208 | <1 | <1 | | | |
| | 4 " | T1 1000 | # | | # | | |
| tert-Butylbenzene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,2,4-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | # | | |
| ,-,· · · · · · · · · · · · · · · · · · · | . 1-3 | | # | | # | | |
| sec-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | \neg | | |
| | | | # | | # | | |
| 4-iso-Propyltoluene | <1 µg/l | TM208 | <1 | <1 | _ | | |
| 1.2 Diablerahannana | <1/l | TM208 | # <1 | <1 | # | | |
| 1,3-Dichlorobenzene | <1 µg/l | 1 101200 | - " | | # | | |
| 1,4-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | " | | |
| , and the second | 10 | | # | | # | | |
| n-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | \neg | | |
| | | | # | | # | | |
| 1,2-Dichlorobenzene | <1 µg/l | TM208 | <1 # | <1 | # | | |
| 1,2-Dibromo-3-chloropropane | <1 µg/l | TM208 | <1 | <1 | # | | |
| 1,2-Dibroffio-3-Gilloroproparie | ν μ μ μ μ μ | 1101200 | ~1 | -1 | | | |
| 1,2,4-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | \dashv | | |
| | | | # | | # | | |
| Hexachlorobutadiene | <1 µg/l | TM208 | <1 | <1 | | | |
| tork American attention (TARAC) | 2A 11 | T14000 | # | | # | | |
| tert-Amyl methyl ether (TAME) | <1 µg/l | TM208 | <1 # | <1 | # | | |
| Naphthalene | <1 µg/l | TM208 | <1 | <1 | # | | |
| | - P9/ | 1111200 | # | | # | | |
| 1,2,3-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | \neg | | |
| | | | # | | # | | |
| 1,3,5-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | | | |
| | | | | | | | |



CERTIFICATE OF ANALYSIS

 SDG:
 200731-85
 Client Reference:
 P2282
 Report Number:
 562378

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Table of Results - Appendix

| | 14,516 6. | Appendix |
|-----------|---|---|
| Method No | Reference | Description |
| TM022 | Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872 | Determination of total suspended solids in waters |
| TM045 | MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130 | Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids |
| TM046 | Method 4500G, AWWA/APHA, 20th Ed., 1999 | Measurement of Dissolved Oxygen by Oxygen Meter |
| TM099 | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984 | Determination of Ammonium in Water Samples using the Kone Analyser |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser |
| TM107 | ISO 6060-1989 | Determination of Chemical Oxygen Demand using COD Dr Lange Kit |
| TM120 | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970 | Determination of Electrical Conductivity using a Conductivity Meter |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS |
| TM172 | Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria | EPH in Waters |
| TM176 | EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of SVOCs in Water by GCMS |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers |
| TM197 | Modified: US EPA Method 8082.EA Method 174 and 5109631 | Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters |
| TM208 | Modified: US EPA Method 8260b & 624 | Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters |
| TM227 | Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500. | Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate |
| TM256 | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter |
| TM343 | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of Selected Pesticides (Suite I) in Liquids by GCMS |
| TM344 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite II) by GCMS |
| TM345 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite III) by GCMS |
| TM411 | Acid_Herbs_GCMS | Acid Herbs in Water by GCMS |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

ALS

SDG: 200731-85 Location: Gort Landfill Client Reference: Order Number: P2282 Z2189 Report Number: Superseded Report: 562378

Test Completion Dates

| Lab Sample No(s) | 22583238 | 22583260 |
|-------------------------------------|---------------|---------------|
| Customer Sample Ref. | SW1 | SW2 |
| | | |
| AGS Ref. | | |
| Depth | 0.00 - 0.00 | 0.00 - 0.00 |
| Туре | Surface Water | Surface Water |
| Acid Herbicides by GCMS | 07-Aug-2020 | 07-Aug-2020 |
| Ammonium Low | 06-Aug-2020 | 06-Aug-2020 |
| Anions by Kone (w) | 03-Aug-2020 | 03-Aug-2020 |
| BOD True Total | 06-Aug-2020 | 05-Aug-2020 |
| COD Unfiltered | 01-Aug-2020 | 01-Aug-2020 |
| Conductivity (at 20 deg.C) | 05-Aug-2020 | 05-Aug-2020 |
| Cyanide Comp/Free/Total/Thiocyanate | 07-Aug-2020 | 07-Aug-2020 |
| Dissolved Metals by ICP-MS | 07-Aug-2020 | 07-Aug-2020 |
| Dissolved Oxygen by Probe | 02-Aug-2020 | 02-Aug-2020 |
| Fluoride | 04-Aug-2020 | 04-Aug-2020 |
| Mercury Dissolved | 05-Aug-2020 | 05-Aug-2020 |
| Mineral Oil C10-40 Aqueous (W) | 07-Aug-2020 | 07-Aug-2020 |
| PCB Congeners - Aqueous (W) | 07-Aug-2020 | 07-Aug-2020 |
| Pesticides (Suite I) by GCMS | 06-Aug-2020 | 06-Aug-2020 |
| Pesticides (Suite II) by GCMS | 07-Aug-2020 | 07-Aug-2020 |
| Pesticides (Suite III) by GCMS | 05-Aug-2020 | 05-Aug-2020 |
| pH Value | 04-Aug-2020 | 03-Aug-2020 |
| Phosphate by Kone (w) | 04-Aug-2020 | 04-Aug-2020 |
| Suspended Solids | 05-Aug-2020 | 05-Aug-2020 |
| SVOC MS (W) - Aqueous | 09-Aug-2020 | 09-Aug-2020 |
| VOC MS (W) | 05-Aug-2020 | 05-Aug-2020 |



 SDG:
 200731-85
 Client Reference:
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 Report Number:
 562378

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35° C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

- 2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

| 1 | Container with Headspace provided for volatiles analysis |
|---|---|
| 2 | Incorrect container received |
| 3 | Deviation from method |
| § | Sampled on date not provided |
| • | Sample holding time exceeded in laboratory |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbe stos Type | Common Name |
|---------------------------|----------------|
| Chrysof le | White Asbests |
| Amosite | BrownAsbests |
| Cro d dolite | Blue Asbe stos |
| Fibrous Act nolite | - |
| Fib to us Anthop hyll ite | - |
| Fibrous Tremolite | - |

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of $<3 \, \mu m$ diameter, longer than 5 μm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017).

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside CH5 3US

> Tel: (01244) 528700 Fax: (01244) 528701

email: haward encustomers ervices@alsglobal.com

Website: www.alsenvironmental.co.uk

Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:07 August 2020Customer:Fehily TimoneySample Delivery Group (SDG):200731-87Your Reference:P2282Location:Gort LandfillReport No:562220

We received 2 samples on Friday July 31, 2020 and 2 of these samples were scheduled for analysis which was completed on Friday August 07, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager









 SDG:
 200731-87
 Client Reference:
 P2282
 Report Number:
 562220

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 22583355 | LH01 | | 0.00 - 0.00 | 30/07/2020 |
| 22583349 | MH-1 | | 0.00 - 0.00 | 30/07/2020 |

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

16.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

ALS

SDG: 200731-87 Client Reference: P2282 Report Number: 562220
Location: Gort Landfill Order Number: Z2189 Superseded Report:

| (ALS) Location: | GOIT LANGINI | | Oiu | ernui | IIIOCI . | | ZZ 10 | |
|--|-------------------------|---------------------|-------------------------------|---------------------------|----------------|-------------------------------|---------------------------|----------------|
| Results Legend | Lab Sample I | No(e) | | | 225 | | | 225 |
| X Test | Lab Sample i | NO(S) | 22583355 | | | | | 22583349 |
| No Determination Possible | | | | | | | | |
| Sample Types - | Custome Sample Refei | | | | LH01 | | | MH-1 |
| S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate | AGS Refere | nce | | | | | | |
| PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage | Depth (m |) | 0.00 - 0.00 | | | 0.00 | | 0.00 - 0.00 |
| RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other | Containe | r | 0.5l glass bottle (ALE227) | 500ml Plastic (ALE208) | H2SO4 (ALE244) | 0.5l glass bottle (ALE227) | 500ml Plastic (ALE208) | H2SO4 (ALE244) |
| | Sample Ty | pe | 듄 | E | 듄 | E | E | 듄 |
| Ammonium Low | All | NDPs: 0 Tests: 2 | | | X | | | Х |
| Anions by Kone (w) | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| BOD True Total | All | NDPs: 0 Tests: 2 | Х | | | Х | | |
| COD Unfiltered | All | NDPs: 0 Tests: 2 | | Х | | | X | |
| Conductivity (at 20 deg.C) | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| Dissolved Metals by ICP-MS | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| Dissolved Oxygen by Probe | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| Fluoride | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| Mercury Dissolved | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| pH Value | All | NDPs: 0 Tests: 2 | | Х | | | Х | |
| Phosphate by Kone (w) | All | NDPs: 0 Tests: 2 | | х | | | х | |
| Total Organic and Inorganic Carbon | All | NDPs: 0 Tests: 2 | | | X | | | Х |
| | | | | | | | | |



SDG: 200731-87 Location: Gort Landfill Client Reference: Order Number: P2282 Z2189 Report Number: Superseded Report:

| Results Leg # ISO17025 accredited. | end | Customer Sample Ref | f. LH01 | MH-1 | | |
|---|---|------------------------------|--------------|-----------------------------------|------|------|
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | | 0.00 - 0.00 Land Leachate (LE) | | |
| * Subcontracted - refer to sub accreditation status. | contractor report for | Date Sampled | | 30/07/2020 | | |
| ** % recovery of the surrogate efficiency of the method. Th | standard to check the | Sample Time | | | | |
| compounds within samples | | Date Received SDG Ref | | 31/07/2020 200731-87 | | |
| recovery (F) Trigger breach confirmed | | Lab Sample No.(s) | 22583355 | 22583349 | | |
| 1-3+§@ Sample deviation (see apper | LOD/U | AGS Reference nits Method | - | | | |
| BOD, unfiltered | <1 m | | 61.9 | 2.18 | | |
| 202, 4 | | 1 | # | | | |
| Oxygen, dissolved | <0.3 r | ng/l TM046 | 7.64 | 9.33 | | |
| | | Ĭ | | | | |
| Organic Carbon, Total | <3 m | g/l TM090 | 26.6 | 6.67 | | |
| | | | | | | |
| Ammoniacal Nitrogen as N | (low <0.01 | mg/l TM099 | 59.2 | 0.63 | | |
| level) | | | | | | |
| Fluoride | <0.5 r | ng/l TM104 | <0.5 | <0.5 | | |
| | | | | | | |
| COD, unfiltered | <7 m | g/l TM107 | 640 | 25.8 | | |
| Conductivity @ 20 dos C | <0.0 | 2 TM120 | 1.07 | | | |
| Conductivity @ 20 deg.C | <0.0 mS/c | | 1.87 | 0.603 | | |
| Arsenic (diss.filt) | <0.5 | | 3.16 | <0.5 | | |
| , a somo (uiss.iiii) | \ | 29/1 11VIIUZ | 2# | | | |
| Cadmium (diss.filt) | <0.08 | µg/l TM152 | <0.08 | <0.08 | | |
| Caamam (alco.mi) | 10.00 | pg// ////02 | 2# | | | |
| Chromium (diss.filt) | <1 µ | g/l TM152 | <1 | <1 | | |
| (************************************** | ľ | | 2# | 2# | | |
| Copper (diss.filt) | <0.3 | ug/l TM152 | 1.19 | 1.3 | | |
| | | | 2# | 2# | | |
| Lead (diss.filt) | <0.2 | ug/l TM152 | 0.308 | <0.2 | | |
| | | | 2# | 2# | | |
| Manganese (diss.filt) | <3 µ | g/l TM152 | 1920 | 19.2 | | |
| | | | 2# | | | |
| Nickel (diss.filt) | <0.4 | ug/l TM152 | 16.3 | 1.73 | | |
| | | | 2# | | | |
| Phosphorus (diss.filt) | <10 µ | ıg/l TM152 | 30.9 | 82.3 | | |
| 0 1 1 (11 511) | | // TN4450 | 2# | | | |
| Selenium (diss.filt) | <1 µ | g/l TM152 | 1.12 | <1 2# | | |
| Zinc (diss.filt) | <1 µ | g/l TM152 | 11.3 | 26.3 | | |
| Ziric (diss.iiit) | ν, μ | 9/1 1101132 | 2# | | | |
| Sodium (Dis.Filt) | <0.076 | mg/l TM152 | 69.5 | 16.8 | | |
| , | | | 2# | | | |
| Magnesium (Dis.Filt) | <0.036 | mg/l TM152 | 44.7 | 9.92 | | |
| | | | 2# | 2# | | |
| Potassium (Dis.Filt) | <0.2 r | ng/l TM152 | 53.1 | 6.97 | | |
| | | | 2# | | | |
| Iron (Dis.Filt) | <0.019 | mg/l TM152 | 0.0299 | 0.0494 | | |
| | | | 2# | | | |
| Mercury (diss.filt) | <0.01 | μg/l TM183 | <0.01 | <0.01 | | |
| Dhaanhat- (O.H. DO.) | -0.05 | ma/l T1404 | 2# | | | |
| Phosphate (Ortho as PO4) | <0.05 | mg/l TM184 | <0.05 | 0.2 | | |
| Sulphate | <2 m | g/l TM184 | 223 | 18.3 | | |
| Julynate | ^2111 | 1101104 | 223 | 10.3 | | |
| Chloride | <2 m | g/l TM184 | 95.1 | 22.3 | | |
| | 12.11 | | 00.1 | | | |
| Total Oxidised Nitrogen as | N <0.1 r | ng/l TM184 | 0.558 | 4.69 | | |
| | | | | | | |
| pН | <1 pH | Units TM256 | 7.06 | 7.41 | | |
| | | | # | | | |
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CERTIFICATE OF ANALYSIS

 SDG:
 200731-87
 Client Reference:
 P2282
 Report Number:
 562220

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Table of Results - Appendix

| Method No | Reference | Description |
|-----------|---|---|
| TM045 | MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130 | Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids |
| TM046 | Method 4500G, AWWA/APHA, 20th Ed., 1999 | Measurement of Dissolved Oxygen by Oxygen Meter |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water |
| TM099 | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984 | Determination of Ammonium in Water Samples using the Kone Analyser |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser |
| TM107 | ISO 6060-1989 | Determination of Chemical Oxygen Demand using COD Dr Lange Kit |
| TM120 | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970 | Determination of Electrical Conductivity using a Conductivity Meter |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers |
| TM256 | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 0117514284. | Determination of pH in Water and Leachate using the GLpH pH Meter |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

ALS

SDG:200731-87Client Reference:P2282Report Number:562220Location:Gort LandfillOrder Number:Z2189Superseded Report:

Test Completion Dates

| Lab Sample No(s) | 22583355 | 22583349 |
|------------------------------------|---------------|---------------|
| Customer Sample Ref. | LH01 | MH-1 |
| AGS Ref. | | |
| Depth | 0.00 - 0.00 | 0.00 - 0.00 |
| Туре | Land Leachate | Land Leachate |
| Ammonium Low | 06-Aug-2020 | 06-Aug-2020 |
| Anions by Kone (w) | 04-Aug-2020 | 04-Aug-2020 |
| BOD True Total | 06-Aug-2020 | 06-Aug-2020 |
| COD Unfiltered | 04-Aug-2020 | 04-Aug-2020 |
| Conductivity (at 20 deg.C) | 05-Aug-2020 | 05-Aug-2020 |
| Dissolved Metals by ICP-MS | 07-Aug-2020 | 07-Aug-2020 |
| Dissolved Oxygen by Probe | 04-Aug-2020 | 02-Aug-2020 |
| Fluoride | 04-Aug-2020 | 04-Aug-2020 |
| Mercury Dissolved | 05-Aug-2020 | 05-Aug-2020 |
| pH Value | 04-Aug-2020 | 04-Aug-2020 |
| Phosphate by Kone (w) | 04-Aug-2020 | 04-Aug-2020 |
| Total Organic and Inorganic Carbon | 06-Aug-2020 | 06-Aug-2020 |



 SDG:
 200731-87
 Client Reference:
 P2282
 Report Number:
 562220

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Appendix

General

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

| 1 | Container with Headspace provided for volatiles analysis |
|---|---|
| 2 | Incorrect container received |
| 3 | Deviation from method |
| § | Sampled on date not provided |
| • | Sample holding time exceeded in laboratory |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbe stos Type | Common Name |
|---------------------------|----------------|
| Chrysof le | White Asbests |
| Amosite | BrownAsbests |
| Cro d dolite | Blue Asbe stos |
| Fibrous Act nolite | - |
| Fib to us Anthop hyll ite | - |
| Fibrous Tremolite | - |

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 μ m diameter, longer than 5 μ m and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017)

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside

> Tel: (01244) 528700 Fax: (01244) 528701

CH5 3US

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:03 September 2020Customer:Fehily TimoneySample Delivery Group (SDG):200826-93Your Reference:P2282Location:Gort LandfillReport No:565742

We received 1 sample on Wednesday August 26, 2020 and 1 of these samples were scheduled for analysis which was completed on Thursday September 03, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager







 SDG:
 200826-93
 Client Reference:
 P2282
 Report Number:
 565742

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 22723140 | LH01 | | 0.00 - 0.00 | 25/08/2020 |

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

ALS

SDG: 200826-93 Client Reference: P2282 Report Number: 565742
Location: Gort Landfill Order Number: Z2189 Superseded Report:

| (ALS) | | | | | |
|--|-------------------------|-----------------------|---------------------------|----------------|----------|
| Results Legend | | | | | 22 |
| X Test | Lab Sample No(s) | | | | 22723140 |
| No Determination Possible | | | | | |
| Sample Types - | Custome Sample Refer | | | | |
| S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate | AGS Refere | nce | | | |
| PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage | Depth (m |) | | | |
| RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other | Containe | 250ml BOD (ALE212) | 500ml Plastic (ALE208) | H2SO4 (ALE244) | |
| | Sample Ty | ре | LΕ | ΞI | Æ |
| Ammonium Low | All | NDPs: 0 Tests: 1 | | | X |
| Anions by Kone (w) | All | NDPs: 0 Tests: 1 | | X | |
| BOD True Total | All | NDPs: 0 Tests: 1 | Х | | |
| COD Unfiltered | All | NDPs: 0 Tests: 1 | X | | |
| Conductivity (at 20 deg.C) | All | NDPs: 0 Tests: 1 | | X | |
| Dissolved Metals by ICP-MS | All | NDPs: 0 Tests: 1 | | X | |
| Dissolved Oxygen by Probe | All | NDPs: 0 Tests: 1 | | X | |
| Fluoride | All | NDPs: 0 Tests: 1 | | X | |
| Mercury Dissolved | All | NDPs: 0 Tests: 1 | | X | |
| pH Value | All | NDPs: 0 Tests: 1 | | Х | |
| Phosphate by Kone (w) | All | NDPs: 0 Tests: 1 | | Х | |
| Total Organic and Inorganic Carbon | All | NDPs: 0 Tests: 1 | | | X |

ALS

SDG: 200826-93 Location: Gort Landfill Client Reference: Order Number: P2282 Z2189 Report Number: Superseded Report:

| Results Legend # ISO17025 accredited. | 1 | Customer Sample Ref. | LH01 |
|---|----------------------|------------------------------|----------------------------------|
| M mCERTS accredited. | | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) | 0.00 - 0.00 |
| Subcontracted - refer to subcontracted - status. | ractor report for | Sample Type Date Sampled | Land Leachate (LE) 25/08/2020 |
| ** % recovery of the surrogate stand efficiency of the method. The resu | ults of individual | Sample Time Date Received | 26/08/2020 |
| compounds within samples aren't recovery | t corrected for the | SDG Ref Lab Sample No.(s) | 200826-93 22723140 |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | LOD/U-it- | AGS Reference | |
| Component BOD, unfiltered | LOD/Units <1 mg/l | | 7.95 |
| · | | | |
| Oxygen, dissolved | <0.3 mg/l | I TM046 | 6.13 |
| Organic Carbon, Total | <3 mg/l | TM090 | 28.4 |
| Ammoniacal Nitrogen as N (lo level) | ow <0.01 mg/ | /I TM099 | 42 |
| Fluoride | <0.5 mg/l | I TM104 | <0.5 |
| COD, unfiltered | <7 mg/l | TM107 | 143 |
| Conductivity @ 20 deg.C | <0.02 | TM120 | 1.77 |
| Arsenic (diss.filt) | mS/cm <0.5 μg/l | I TM152 | 2.14 |
| | | | 2 |
| Cadmium (diss.filt) | <0.08 µg/ | /I TM152 | <0.08 2 |
| Chromium (diss.filt) | <1 µg/l | TM152 | <1 2: |
| Copper (diss.filt) | <0.3 µg/l | TM152 | 3.02 |
| Lead (diss.filt) | <0.2 µg/l | I TM152 | <0.2 |
| Manganese (diss.filt) | <3 μg/l | TM152 | 4310 |
| Nickel (diss.filt) | <0.4 µg/l | I TM152 | 13.7 |
| | ~10 ··~!! | TM152 | 23.6 |
| Phosphorus (diss.filt) | <10 µg/l | | 23.6 |
| Selenium (diss.filt) | <1 µg/l | TM152 | <1 2: |
| Zinc (diss.filt) | <1 µg/l | TM152 | 19 2: |
| Sodium (Dis.Filt) | <0.076 mg | g/l TM152 | 37.3 |
| Magnesium (Dis.Filt) | <0.036 mg | g/I TM152 | 27.1 |
| Potassium (Dis.Filt) | <0.2 mg/l | I TM152 | 36.4 |
| Iron (Dis.Filt) | <0.019 mg | g/I TM152 | 0.0492 |
| Mercury (diss.filt) | <0.01 μg/ | | <0.01 |
| | | | 2 |
| Phosphate (Ortho as PO4) | <0.05 mg/ | | <0.05 |
| Sulphate | <2 mg/l | | 128 |
| Chloride | <2 mg/l | | 49 |
| Total Oxidised Nitrogen as N | <0.1 mg/l | I TM184 | <0.1 |
| pН | <1 pH Unit | ts TM256 | 7.1 |
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 SDG:
 200826-93
 Client Reference:
 P2282
 Report Number:
 565742

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Table of Results - Appendix

| Method No | Reference | Description |
|-----------|---|---|
| TM045 | MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130 | Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids |
| TM046 | Method 4500G, AWWA/APHA, 20th Ed., 1999 | Measurement of Dissolved Oxygen by Oxygen Meter |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water |
| TM099 | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984 | Determination of Ammonium in Water Samples using the Kone Analyser |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser |
| TM107 | ISO 6060-1989 | Determination of Chemical Oxygen Demand using COD Dr Lange Kit |
| TM120 | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970 | Determination of Electrical Conductivity using a Conductivity Meter |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers |
| TM256 | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS



SDG: 200826-93 Location: Gort Landfill Client Reference: Order Number: P2282 Z2189 Report Number: Superseded Report: 565742

Test Completion Dates

| Lab Sample No(s) | 22723140 |
|------------------------------------|---------------|
| Customer Sample Ref. | LH01 |
| AGS Ref. | |
| Depth | 0.00 - 0.00 |
| Туре | Land Leachate |
| Ammonium Low | 02-Sep-2020 |
| Anions by Kone (w) | 31-Aug-2020 |
| BOD True Total | 01-Sep-2020 |
| COD Unfiltered | 28-Aug-2020 |
| Conductivity (at 20 deg.C) | 27-Aug-2020 |
| Dissolved Metals by ICP-MS | 01-Sep-2020 |
| Dissolved Oxygen by Probe | 28-Aug-2020 |
| Fluoride | 01-Sep-2020 |
| Mercury Dissolved | 03-Sep-2020 |
| pH Value | 27-Aug-2020 |
| Phosphate by Kone (w) | 27-Aug-2020 |
| Total Organic and Inorganic Carbon | 30-Aug-2020 |



 SDG:
 200826-93
 Client Reference:
 P2282
 Report Number:
 565742

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

Appendix

General

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

| 1 | Container with Headspace provided for volatiles analysis |
|---|---|
| 2 | Incorrect container received |
| 3 | Deviation from method |
| § | Sampled on date not provided |
| • | Sample holding time exceeded in laboratory |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbe stos Type | Common Name | | |
|---------------------------|----------------|--|--|
| Chrysof le | White Asbests | | |
| Amosite | BrownAsbests | | |
| Cro d dolite | Blue Asbe stos | | |
| Fibrous Act nolite | - | | |
| Fib to us Anthop hyll ite | - | | |
| Fibrous Tremolite | - | | |

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 μ m diameter, longer than 5 μ m and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017)

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside

> Tel: (01244) 528700 Fax: (01244) 528701

CH5 3US

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:27 August 2020Customer:Fehily TimoneySample Delivery Group (SDG):200731-86

Your Reference: Galway Historic Landfills

Location: Gort Landfill Report No: 564885

This report has been revised and directly supersedes 562437 in its entirety.

We received 3 samples on Friday July 31, 2020 and 3 of these samples were scheduled for analysis which was completed on Monday August 10, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager

IIac-MRA





Validated

SDG: 200731-86 Client Reference: Galway Historic Landfills Report Number: 564885 Gort Landfill Z2189 Superseded Report: 562437 Location: Order Number:

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 22583337 | BH1 | | 0.00 - 0.00 | 30/07/2020 |
| 22583320 | GW01 | | 0.00 - 0.00 | 30/07/2020 |
| 22583328 | GW02 | | 0.00 - 0.00 | 30/07/2020 |

Maximum Sample/Coolbox Temperature (°C):

16.2

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

ISO5667-3 Water quality - Sampling - Part3 During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

Only received samples which have had analysis scheduled will be shown on the following pages.

| AL | 5 |
|----|---|

SDG: 200731-86 Client Reference: Galway Historic Landfills Report Number: 564885 Gort Landfill Z2189 Superseded Report: 562437 Location: Order Number: Results Legend 22583337 22583320 22583328 Lab Sample No(s) X Test No Determination Possible Customer **GW01** 뭔1 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00 PR - Process Water 0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent - 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) H2SO4 (ALE244) H2SO4 (ALE244) NaOH (ALE245) NaOH (ALE245) H2SO4 (ALE244) NaOH (ALE245) DW - Drinking Water Non-regulatory 500ml Plastic (ALE208) 500ml Plastic (ALE208) ۷ial Vial (ALE297) Vial (ALE297) UNL - Unspecified Liquid (ALE297) SL - Sludge Container G - Gas OTH - Other GW GW GW Sample Type GW Acid Herbicides by GCMS All NDPs: 0 Tests: 3 Х Χ Χ Alkalinity as CaCO3 NDPs: 0 Tests: 3 X X Χ Ammonium Low All NDPs: 0 Tests: 3 X X X Anions by Kone (w) All NDPs: 0 Tests: 3 X X X BOD True Total All NDPs: 0 Tests: 3 X Х X COD Unfiltered All NDPs: 0 Tests: 3 X Х Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 3 Χ Χ Х Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 3 Χ Χ Χ Dissolved Metals by ICP-MS All NDPs: 0 Tests: 3 X X X Dissolved Oxygen by Probe All NDPs: 0 Tests: 3 X X X Faecal Coliforms (W)* All NDPs: 0 Tests: 3 X X X Fluoride All NDPs: 0 Tests: 3 Х Х X Mercury Dissolved All NDPs: 0 Tests: 3 X Х Χ PCB Congeners - Aqueous (W) All NDPs: 0 Tests: 3 Х X Х Pesticides (Suite I) by GCMS All NDPs: 0 Tests: 3 Χ X Χ

CERTIFICATE OF ANALYSIS

| | / | | |
|---|---|---|--|
| 1 | | 9 | |
| | | ₹ | |

SDG: 200731-86 Client Reference: Galway Historic Landfills Report Number: 564885 Location: Gort Landfill Z2189 Superseded Report: 562437 Order Number: Results Legend 22583337 22583320 22583328 Lab Sample No(s) X Test No Determination Possible Customer GW02 GW01 뭔1 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00 PR - Process Water 0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent - 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) H2SO4 (ALE244) H2SO4 (ALE244) NaOH (ALE245) NaOH (ALE245) H2SO4 (ALE244) NaOH (ALE245) 500ml Plastic (ALE208) DW - Drinking Water Non-regulatory Vial (ALE297) Vial (ALE297) Vial UNL - Unspecified Liquid .I (ALE297) SL - Sludge Container G - Gas OTH - Other Sample Type GW GΜ GW GW GW GΜ GW GW GW GΜ GΜ GW GW GW GW Pesticides (Suite II) by GCMS All NDPs: 0 Tests: 3 Χ X X Pesticides (Suite III) by GCMS All NDPs: 0 Tests: 3 Х X Х pH Value All NDPs: 0 Tests: 3 X X X SVOC MS (W) - Aqueous All NDPs: 0 Tests: 3 Х Х Х Total Coliforms(W)* All NDPs: 0 Tests: 2 Х X Total Organic and Inorganic Carbon All NDPs: 0 Tests: 3 Х Х Χ VOC MS (W) All NDPs: 0 Tests: 3 Χ Χ Χ

ALS

SDG: 200731-86 Location: Gort Landfill

Client Reference:

Order Number:

Galway Historic Landfills Z2189 Report Number: Superseded Report:

| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
|---|----------------|------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| M mCERTS accredited. aq Aqueous / settled sample. | | Decition (192 | | | 0.00 | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | | |
| * Subcontracted - refer to subcontractor report accreditation status. | | Date Sampled Sample Time | 30/07/2020 | 30/07/2020 | 30/07/2020 | | |
| ** % recovery of the surrogate standard to check efficiency of the method. The results of individed compounds within samples aren't corrected for the compounds. | dual | Date Received | 31/07/2020 | 31/07/2020 | 31/07/2020 | | |
| recovery (F) Trigger breach confirmed | or tire | SDG Ref Lab Sample No.(s) | 200731-86 22583337 | 200731-86 22583320 | 200731-86 22583328 | | |
| 1-3+§@ Sample deviation (see appendix) | | AGS Reference | | | | | |
| Component Faecal coliforms confirmed | LOD/Units | Method SUB | 4 | 19 | 620 | | |
| (M7M)* | CFU/100ml | 005 | · · | 10 | 020 | | |
| Total Coliform Presumptive (M16)* | CFU/100ml | SUB | >100 | >100 | | | |
| Total Coliform Confirmed (M14)* | CFU/100ml | SUB | >100 | >100 | | | |
| Alkalinity, Total as HCO3 | <2 mg/l | TM043 | 952 | 744 | 1710 | | |
| BOD, unfiltered | <1 mg/l | TM045 | <1 | <1 # # | 4.52 # | | |
| Oxygen, dissolved | <0.3 mg/l | TM046 | 9.4 | 9.5 | 9.12 | | |
| Organic Carbon, Total | <3 mg/l | TM090 | <3 | < 3 | <3 # | | |
| Ammoniacal Nitrogen as N (low level) | <0.01 mg/l | TM099 | 0.0297 | 0.0331 | 0.0627 # | | |
| Fluoride | <0.5 mg/l | TM104 | <0.5 | <0.5 # # | <0.5 # | | |
| COD, unfiltered | <7 mg/l | TM107 | 94.5 | 116 | 412 # | | |
| Conductivity @ 20 deg.C | <0.02 mS/cm | TM120 | 0.62 | 0.623 | 0.593 # | | |
| Arsenic (diss.filt) | <0.5 µg/l | TM152 | 0.532 | 0.642 | 0.754 2 # | | |
| Barium (diss.filt) | <0.2 µg/l | TM152 | 20.3 | 22.7 | 38.4 2 # | | |
| Boron (diss.filt) | <10 µg/l | TM152 | 12.5 2: | 21.9 | 25.1 2# | | |
| Cadmium (diss.filt) | <0.08 µg/l | TM152 | <0.08 | <0.08 | <0.08 | | |
| Chromium (diss.filt) | <1 µg/l | TM152 | <1 2: | <1 | <1 2# | | |
| Copper (diss.filt) | <0.3 µg/l | TM152 | 1.46 | 0.926 | 3.77 2 # | | |
| Lead (diss.filt) | <0.2 µg/l | TM152 | <0.2 2: | <0.2 | <0.2 | | |
| Manganese (diss.filt) | <3 µg/l | TM152 | <3 2: | <3 | 5.72 2 # | | |
| Nickel (diss.filt) | <0.4 µg/l | TM152 | 1.78 2: | 3.64 # 2# | 7.68 2# | | |
| Phosphorus (diss.filt) | <10 µg/l | TM152 | 18 2 : | 11.2 | <10 2# | | |
| Selenium (diss.filt) | <1 µg/l | TM152 | 1.42 2 ; | | 3.64 2# | | |
| Thallium (diss.filt) | <2 µg/l | TM152 | <2 2: | | <2 2# | | |
| Zinc (diss.filt) | <1 µg/l | TM152 | 1.52 2 ; | | 2.6 2# | | |
| Sodium (Dis.Filt) | <0.076 mg/l | TM152 | 9.71 2: | 33.9 | 17.2 2# | | |
| Magnesium (Dis.Filt) | <0.036 mg/l | TM152 | 7.69 2: | 12.8 # 2# | 9.62 2# | | |
| Potassium (Dis.Filt) | <0.2 mg/l | TM152 | 1.83 2: | 4.19 | 2.43 2# | | |
| Calcium (Dis.Filt) | <0.2 mg/l | TM152 | 130 2: | 91 | 112 2# | | |
| Iron (Dis.Filt) | <0.019 mg/l | TM152 | <0.019 2 : | <0.019 | <0.019 2 # | | |
| Mercury (diss.filt) | <0.01 µg/l | TM183 | <0.01 2 ; | <0.01 | <0.01 2 # | | |
| Sulphate | <2 mg/l | TM184 | 12.9 | 39.8 | 49.8 # | | |
| Chloride | <2 mg/l | TM184 | 20.2 | 45.7 # # | 20.7 | | |
| Total Oxidised Nitrogen as N | <0.1 mg/l | TM184 | 1.86 | 1.76 | 1.35 # | | |
| l | | | | | π | | |



SDG: 200731-86 Location: Gort Landfill Client Reference: Order Number: Galway Historic Landfills Z2189 Report Number: Superseded Report:

| Results Legend | | Customer Sample Ref. | DUA | CWO4 | CIAIOS | 1 | |
|--|-------------|------------------------------------|---------------------------------|---------------------------------|---------------------------------|---|---|
| # ISO17025 accredited. M mCERTS accredited. | | oustomer sample Kef. | BH1 | GW01 | GW02 | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report f | for | Sample Type Date Sampled | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | | |
| accreditation status. ** % recovery of the surrogate standard to check | the | Sample Time | | | | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected fo | | Date Received SDG Ref | 31/07/2020 200731-86 | 31/07/2020 200731-86 | 31/07/2020 200731-86 | | |
| recovery (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22583337 | 22583320 | 22583328 | | |
| Component | LOD/Units | Method | | | | | |
| PCB congener 28 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 52 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| · | | | | | | | |
| PCB congener 101 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 118 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| | | | | | | | |
| PCB congener 138 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 153 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| | | | | | | | |
| PCB congener 180 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| Sum of detected EC7 PCB's | <0.105 µg/l | TM197 | <0.105 | <0.105 | <0.105 | | |
| | 10 | | | | | | |
| Cyanide, Total | <0.05 mg/l | TM227 | <0.05 | <0.05 | <0.05 | | |
| pH | <1 pH Units | TM256 | 7.55 | 7.76 | 7.59 | | |
| F | | | # | # | # | | |
| Trifluralin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| alpha-HCH | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| | 5.51 p.31 | | | | | | |
| gamma-HCH (Lindane) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Heptachlor | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| rioptacino | 10.01 µg/i | 1100-10 | -0.01 | 10.01 | -0.01 | | |
| Aldrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| beta-HCH | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| bota from | -0.01 рул | 1111010 | -0.01 | 0.01 | -0.01 | | |
| Isodrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| delta-HCH | <0.01 µg/l | TM343 | <0.02 | <0.02 | <0.02 | | |
| ucita Horr | 10.01 µg/i | 1100-10 | 10.02 | -0.02 | 10.02 | | |
| Heptachlor epoxide | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-DDE | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| 0,0 552 | -0.01 рул | 1111010 | -0.01 | -0.01 | -0.01 | | |
| Endosulphan I | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| trans-Chlordane | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| cis-Chlordane | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| p,p'-DDE | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Dieldrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-DDD (TDE) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Endrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-DDT | <0.01 µg/l | TM343 | <0.04 | <0.04 | <0.04 | | |
| | | | | | | | |
| p,p'-DDD (TDE) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Endosulphan II | <0.02 µg/l | TM343 | <0.02 | <0.02 | <0.02 | | + |
| | 3.02 μg/1 | A INIO FO | | | | | |
| p,p'-DDT | <0.01 µg/l | TM343 | <0.07 | <0.07 | <0.07 | | |
| o,p'-Methoxychlor | <0.01 µg/l | TM343 | <0.04 | <0.04 | <0.04 | | |
| S,p motioxyonioi | ·0.01 μg/1 | 1111040 | -0.07 | .0.07 | -0.07 | | |
| p,p'-Methoxychlor | <0.01 µg/l | TM343 | <0.07 | <0.07 | <0.07 | | |
| | | | | | | | |



SDG: 200731-86 Location: Gort Landfill

Client Reference: Order Number: Galway Historic Landfills Z2189 Report Number: Superseded Report:

| Results Legend | | Customer Sample Ref. | 5 | 01101 | 211/22 | <u> </u> | |
|---|------------|-----------------------------|---------------------------------|---------------------------------|---------------------------------|----------|--|
| # ISO17025 accredited. M mCERTS accredited. | | oustomer Sample Kef. | BH1 | GW01 | GW02 | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | for | Sample Type Date Sampled | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | | |
| accreditation status. ** % recovery of the surrogate standard to check | the | Sample Time | | | | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for | | Date Received SDG Ref | 31/07/2020 200731-86 | 31/07/2020 200731-86 | 31/07/2020 200731-86 | | |
| recovery (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) | 22583337 | 22583320 | 22583328 | | |
| 1-3+§@ Sample deviation (see appendix) Component | LOD/Units | AGS Reference Method | | | | | |
| Endosulphan Sulphate | <0.02 µg/l | TM343 | <0.04 | <0.04 | <0.04 | | |
| Permethrin I | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Permethrin II | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| 1,3,5-Trichlorobenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Hexachlorobutadiene | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| 1,2,4-Trichlorobenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| 1,2,3-Trichlorobenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Dichlorvos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Dichlobenil | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Mevinphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Tecnazene | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Hexachlorobenzene | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Demeton-S-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Phorate | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Diazinon | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Triallate | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Atrazine | <0.01 µg/l | TM344 | 0.0305 | 0.0605 | <0.01 | | |
| Simazine | <0.01 µg/l | TM344 | <0.01 | 0.0362 | <0.01 | | |
| Disulfoton | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Propetamphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Chlorpyriphos-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Dimethoate | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Pirimiphos-methyl | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Chlorpyriphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Methyl Parathion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Malathion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Fenthion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Fenitrothion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Triadimefon | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Pendimethalin | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Parathion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Chlorfenvinphos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| trans-Chlordane | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |

ALS

 SDG:
 200731-86
 Clien

 Location:
 Gort Landfill
 Order

Client Reference: Galway Historic Landfills Order Number: Z2189 Report Number: Superseded Report:

| Results Legend | | Customer Cample Bef | Bu. | 0,494 | 914199 | i | |
|---|--------------|-----------------------------|-------------------------|-------------------------|-------------------------|---|--|
| # ISO17025 accredited. M mCERTS accredited. | (| Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | for | Sample Type | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | | |
| accreditation status. ** % recovery of the surrogate standard to check | k the | Date Sampled Sample Time | 30/07/2020 | 30/07/2020 | 30/07/2020 | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for | | Date Received SDG Ref | 31/07/2020 200731-86 | 31/07/2020 200731-86 | 31/07/2020 200731-86 | | |
| recovery (F) Trigger breach confirmed | | Lab Sample No.(s) | 22583337 | 22583320 | 22583328 | | |
| 1-3+§@ Sample deviation (see appendix) Component | LOD/Units | AGS Reference Method | | | | | |
| cis-Chlordane | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Ethion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Carbophenothion | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | + |
| | J | | | | | | |
| Triazophos | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Dhanalana | <0.01 ···~// | TMOAA | z0.01 | z0.01 | <0.01 | | |
| Phosalone | <0.01 µg/l | TM344 | <0.01 | <0.01 | <0.01 | | |
| Azinphos methyl | <0.02 µg/l | TM344 | <0.02 | <0.02 | <0.02 | | |
| | | | | | | | |
| Azinphos ethyl | <0.02 µg/l | TM344 | <0.02 | <0.02 | <0.02 | | |
| Etridiazole | <0.01 µg/l | TM345 | <0.02 | <0.02 | <0.02 | | + |
| Landidzoid | -0.01 μg/l | 1 IVIO+U | N.U2 | \U.UZ | \0.02 | | |
| Pentachlorobenzene | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Propachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Quintozene (PCNB) | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | + |
| Quintozono (i orib) | -0.01 дд/1 | 1111010 | -0.01 | -0.01 | -0.01 | | |
| Omethoate | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Propazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Propyzamide | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | + |
| | J | | | | | | |
| Alachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| D 1 | .0.04 // | TM0.45 | .0.04 | .0.04 | .0.04 | | |
| Prometryn | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Telodrin | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Terbutryn | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Chlorothalonil | <0.01 µg/l | TM345 | <0.03 | <0.03 | <0.03 | | + |
| Oniorothaloriii | νο.στ μg/ι | TIVIOTO | ٧٥.05 | V0.00 | 10.03 | | |
| Etrimphos | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| | | | | | | | |
| Metazachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Cyanazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | + |
| · · · · | | | | | | | |
| Trietazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Coumanhos | <0.01··~// | TM345 | <0.01 | <0.01 | <0.01 | | + |
| Coumaphos | <0.01 µg/l | 1 IVI345 | \U.U I | \U.U1 | \U.U1 | | |
| Phosphamidon I | <0.01 µg/l | TM345 | <0.02 | <0.02 | <0.02 | | |
| | | | | | | | |
| Phosphamidon II | <0.01 µg/l | TM345 | <0.02 | <0.02 | <0.02 | | |
| Dinitro-o-cresol | <0.1 µg/l | TM411 | <0.1 | <0.5 | <0.5 | | + |
| Dillill 0-0-016301 | -υ. ι μg/ι | (IVI++ (I | ~ 0.1 | \0.0 | \U. U | | |
| Clopyralid | <0.04 µg/l | TM411 | <0.04 | <0.2 | <0.2 | | |
| | | | | | | | |
| MCPA | <0.05 µg/l | TM411 | <0.05 | <0.25 | <0.25 | | |
| Mecoprop | <0.04 µg/l | TM411 | <0.04 | <0.2 | <0.2 | | + |
| | υ.υ γ μg/l | | | | | | <u> </u> |
| Dicamba | <0.04 µg/l | TM411 | <0.04 | <0.2 | <0.2 | | |
| Lucas | | | | | | | |
| MCPB | <0.05 µg/l | TM411 | <0.05 | <0.25 | <0.25 | | |
| 2,4-DB | <0.1 µg/l | TM411 | <0.1 | <0.5 | <0.5 | | |
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SDG:200731-86Client Reference:Galway Historic LandfillsReport Number:564885Location:Gort LandfillOrder Number:Z2189Superseded Report:562437

| Results Legend | | Customer Sample Ref. | DIM | OWIN | 014/99 | 1 | 1 | |
|---|-------------------------|------------------------------------|-----------------------|-----------------------|-----------------------|---|---|--|
| # ISO17025 accredited. M mCERTS accredited. | | Customer Sample Ker. | BH1 | GW01 | GW02 | | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | t for | Sample Type | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | | | |
| accreditation status. ** % recovery of the surrogate standard to chec | | Date Sampled Sample Time | 30/07/2020 | 30/07/2020 | 30/07/2020 | | | |
| efficiency of the method. The results of indiv compounds within samples aren't corrected | idual | Date Received | 31/07/2020 | 31/07/2020 | 31/07/2020 | | | |
| recovery (F) Trigger breach confirmed | ioi tile | SDG Ref | 200731-86 22583337 | 200731-86 22583320 | 200731-86 22583328 | | | |
| 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | | | | | | |
| 2,3,6-Trichlorobenzoic acid | LOD/Units <0.05 μg/l | | <0.05 | <0.25 | <0.25 | | | |
| 2,3,6-Trichiorobenzoic acid | <0.05 μg/i | 1101411 | <0.05 | <0.25 | <0.25 | | | |
| Dichlorprop | <0.1 µg/l | TM411 | <0.1 | <0.5 | <0.5 | | | |
| Triclopyr | <0.05 µg/l | TM411 | <0.05 | <0.25 | <0.25 | | | |
| Fenoprop (Silvex) | <0.1 µg/l | | <0.1 | <0.5 | <0.5 | | | |
| 2,4-Dichlorophenoxyacetic acid | <0.05 µg/l | | <0.05 | <0.25 | <0.25 | | | |
| 2,4,5-Trichlorophenoxyacetic acid | <0.05 µg/l | | <0.05 | <0.25 | <0.25 | | | |
| Bromoxynil | <0.04 µg/l | | <0.04 | <0.2 | <0.2 | | | |
| Benazolin | <0.04 µg/l | | <0.04 | <0.2 | <0.2 | | | |
| loxynil | <0.05 µg/l | | <0.05 | <0.25 | <0.25 | | | |
| Pentachlorophenol | <0.04 µg/l | | <0.04 | <0.2 | <0.2 | | | |
| Fluoroxypyr | <0.1 µg/l | TM411 | <0.1 | <0.5 | <0.5 | | | |
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| 17:16:10 27/09/2020 | | | | | | | | |

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SDG:200731-86Client Reference:Galway Historic LandfillsReport Number:564885Location:Gort LandfillOrder Number:Z2189Superseded Report:562437

| SVAC | MC | ^^^ | - Aqueous |
|------|-------|--------|-----------|
| 3700 | IVI O | (VV) | - Adueous |

| SVOC MS (W) - Aqueous | s | | | | | | |
|--|-----------|------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| # ISO17025 accredited. | · | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | Position (co) | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | | |
| Subcontracted - refer to subcontractor report accreditation status. | for | Date Sampled | 30/07/2020 | 30/07/2020 | 30/07/2020 | | |
| ** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi | | Sample Time Date Received | 31/07/2020 | 31/07/2020 | 31/07/2020 | | |
| compounds within samples aren't corrected f | | SDG Ref | 200731-86 | 200731-86 | 200731-86 | | |
| (F) Trigger breach confirmed | | Lab Sample No.(s) | 22583337 | 22583320 | 22583328 | | |
| 1-3+§@ Sample deviation (see appendix) Component | LOD/Units | AGS Reference Method | | | | | |
| 1,2,4-Trichlorobenzene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 1,2-Dichlorobenzene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 1,3-Dichlorobenzene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 1,4-Dichlorobenzene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 0.45 Triable reads and (5 m) | 44 // | TM176 | # | 4 | # <20 | | |
| 2,4,5-Trichlorophenol (aq) | <1 µg/l | TIVITO | <10 # | ×10 # | ~20 # | | |
| 2,4,6-Trichlorophenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 2,4,0 Monorophenor (aq) | 11 µg/1 | 1101170 | # | # | 1 <u>2</u> 0 | | |
| 2,4-Dichlorophenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | 1 0 | | # | # | # | | |
| 2,4-Dimethylphenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 2,4-Dinitrotoluene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 2,6-Dinitrotoluene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | 4 " | 714470 | # | # | # | | |
| 2-Chloronaphthalene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 2-Chlorophenol (aq) | <1 ug/l | TM176 | * | # <10 | * | | |
| 2-Chlorophenor (aq) | <1 µg/l | 1101176 | ~10 # | \10 | \20 # | | |
| 2-Methylnaphthalene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| z mearymapharanene (aq) | . 43 | | # | # | ° | | |
| 2-Methylphenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| , , , , , | 1 0 | | # | # | # | | |
| 2-Nitroaniline (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 2-Nitrophenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | =111=4 | # | # | # | | |
| 3-Nitroaniline (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 4 Dramanhan dahan dathar (as) | -d/l | TM176 | # <10 | <10 # | # *20 | | |
| 4-Bromophenylphenylether (aq) | <1 µg/l | 1101176 | <10 # | | <20 # | | |
| 4-Chloro-3-methylphenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 4 Official of methylphenol (uq) | 11 µg/1 | 1101170 | # | # | 1 <u>2</u> 0 | | |
| 4-Chloroaniline (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | | | | | |
| 4-Chlorophenylphenylether (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| 4-Methylphenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 120 | 4 " | 714470 | # | # | # | | |
| 4-Nitroaniline (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 4-Nitrophenol (aq) | <1 µg/l | TM176 | * | 4 | * | | |
| T MILLOPHICHOI (ay) | ~ i µg/i | 1101170 | ~10 | `10 | `~20 | | |
| Azobenzene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| (۳۹/ | . 49., | | # | # | -20 # | | |
| Acenaphthylene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Acenaphthene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Anthracene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 11 (0 01) | | | # | # | # | - | |
| bis(2-Chloroethyl)ether (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| his/O Chlara ett \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | -A . " | T84470 | # <10 | # <10 | # <20 | | |
| bis(2-Chloroethoxy)methane | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| (aq) bis(2-Ethylhexyl) phthalate (aq) | <2 µg/l | TM176 | * | # <20 | # <40 | | |
| bio(z-Eurymexyr) priudatate (aq) | ~∠ µg/i | 1101170 | <20 # | <20 # | <40 # | | |
| Butylbenzyl phthalate (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 2 | י שייו | | # | # | # | | |
| Benzo(a)anthracene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |

200731-86 Gort Landfill Galway Historic Landfills Z2189 Report Number: Superseded Report: 564885 562437 SDG: Client Reference: Location: Order Number:

| SVOC MS (W) - Aqueous | 6 | | | | | | |
|--|-----------|------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | for | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | | |
| accreditation status. ** % recovery of the surrogate standard to check | | Date Sampled Sample Time | 30/07/2020 | 30/07/2020 | 30/07/2020 | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for | dual | Date Received | 31/07/2020 200731-86 | 31/07/2020 200731-86 | 31/07/2020 200731-86 | | |
| recovery (F) Trigger breach confirmed | | SDG Ref Lab Sample No.(s) | 22583337 | 22583320 | 22583328 | | |
| 1-3+§@ Sample deviation (see appendix) Component | LOD/Units | AGS Reference Method | | | | | |
| Benzo(b)fluoranthene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Benzo(k)fluoranthene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| Denne (a)nurana (as) | ا/مرر 4 | TM176 | <10 | * | * | | |
| Benzo(a)pyrene (aq) | <1 µg/l | TIVITO | \10 | \ 10 # | \2 0 # | | |
| Benzo(g,h,i)perylene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Carbazole (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| Chrysene (aq) | <1 µg/l | TM176 | * | * | * | | |
| Onlysene (aq) | -1 μg/i | TIWITTO | 4 | *10 | _20 # | | |
| Dibenzofuran (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| n-Dibutyl phthalate (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| Diethyl phthalate (aq) | <1 µg/l | TM176 | * | * | # <20 | | |
| Dietriyi pritrialate (aq) | <1 μg/1 | TIVITO | ~10 # | \ 10 # | \20 # | | |
| Dibenzo(a,h)anthracene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Dimethyl phthalate (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| n-Dioctyl phthalate (aq) | <5 μg/l | TM176 | * | * | * <100 | | |
| II-Diociyi pilitialate (aq) | <5 μg/i | TIWITTO | 4 | 4 | 4 | | |
| Fluoranthene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Fluorene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| Hexachlorobenzene (aq) | <1 µg/l | TM176 | * | * | * | | |
| riexaciiloroperizerie (aq) | -1 μg/i | TIWITTO | # | *10 | _20 # | | |
| Hexachlorobutadiene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
| Pentachlorophenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| Phenol (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 1 1101101 (44) | . 149/ | | ., | | | | |
| n-Nitroso-n-dipropylamine (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| 11 11 11 () | 4 0 | T14470 | # | # | # | | |
| Hexachloroethane (aq) | <1 µg/l | TM176 | <10 # | <10 # | <20 # | | |
| Nitrobenzene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| . " | | | # | # | # | | |
| Naphthalene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| h() | 44 // | TN4470 | # | # | # | | |
| Isophorone (aq) | <1 µg/l | TM176 | <10 # | <10 # | <20 # | | |
| Hexachlorocyclopentadiene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | | | | | |
| Phenanthrene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| Indeno(1,2,3-cd)pyrene (aq) | <1 µg/l | TM176 | * | * | * | | |
| macrio(1,2,0-ou)pyrone (aq) | - 1 μg/1 | 1101170 | ~10 # | ×10 # | _20 # | | |
| Pyrene (aq) | <1 µg/l | TM176 | <10 | <10 | <20 | | |
| | | | # | # | # | | |
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200731-86 Gort Landfill Galway Historic Landfills Z2189 Report Number: Superseded Report: 564885 562437 SDG: Client Reference: Location: Order Number:

| OC. | MS | \W\ | |
|-----|----|-----|--|

| VOC MS (W) | | | | | | | | |
|---|---------------------------------------|------------------------------|---------------------------------|---------------------------------|---------------------------------|---|---|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | | | |
| diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | for | Sample Type Date Sampled | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | | | |
| accreditation status. ** % recovery of the surrogate standard to check | k the | Sample Time | 30/07/2020 | 30/01/2020 | 30/01/2020 | | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for | dual | Date Received | 31/07/2020 | 31/07/2020 | 31/07/2020 | | | |
| recovery | | SDG Ref Lab Sample No.(s) | 200731-86 22583337 | 200731-86 22583320 | 200731-86 22583328 | | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | AGS Reference | 2200001 | 2200020 | 22000020 | | | |
| Component | LOD/Units | Method | | | | | | |
| Dibromofluoromethane** | % | TM208 | 108 | 105 | 107 | | | |
| | | | | | | | | |
| Toluene-d8** | % | TM208 | 96.9 | 97.2 | 96.8 | | | |
| | | | | | | | | |
| 4-Bromofluorobenzene** | % | TM208 | 99.5 | 101 | 99.5 | | | |
| | | | | | | | | |
| Dichlorodifluoromethane | <1 µg/l | TM208 | <1 | <1 | <1 " | | | |
| 011 | 4 " | T1 1000 | # | # | # | | | |
| Chloromethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| Vinul ablarida | <1a/l | TM208 | # | # | # <1 | | | |
| Vinyl chloride | <1 µg/l | 1 M208 | <1 # | <1 # | <u> </u> | | | |
| Bromomethane | <1 ug/l | TM208 | <1 | <1 | <1 | | | |
| טוטווטוופנומוופ | <1 µg/l | I IVI∠U0 | <1 # | <u> </u> | <u> </u> | | | |
| Chloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| Onioroculario | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | I IVIZUO | ×1 # | - " | - " | | | |
| Trichlorofluoromethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| monioronicoronicularie | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | I IVIZUO | <u> </u> | * | - " | | | |
| 1,1-Dichloroethene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| 1,1 Dictioroculenc | 1 μg/1 | 110200 | # | # | # | | | |
| Carbon disulphide | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| Sursen disalpinas | . 49 | 1200 | . # | . # | . # | | | |
| Dichloromethane | <3 µg/l | TM208 | <3 | <3 | <3 | | | |
| | 1 - 1-3. | | # | # | # | | | |
| Methyl tertiary butyl ether | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| (MTBE) | " | | # | # | # | | | |
| trans-1,2-Dichloroethene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| , | "" | | # | # | # | | | |
| 1,1-Dichloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | # | # | # | | | |
| cis-1,2-Dichloroethene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | # | # | # | | | |
| 2,2-Dichloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | | | | | | |
| Bromochloromethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | # | # | # | | | |
| Chloroform | <1 µg/l | TM208 | <1 | 8.44 | 7.39 | | | |
| | | | # | # | # | | | |
| 1,1,1-Trichloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| 44.8:11 | -4 " | T14000 | # | # | # | | | |
| 1,1-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 # | <1 | | | |
| Carbontetrachloride | <1 ug/l | TM208 | | <1 | # <1 | | | |
| Carbonienacinonae | <1 µg/l | I IVIZUO | <1 # | <u> </u> | <u> </u> | | | |
| 1,2-Dichloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| 1,2 Diomorostrians | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | I IVIZUU | * | * | - " | | | |
| Benzene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | . 29" | 250 | # | # | # | | | |
| Trichloroethene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | -3. | | . # | . # | . # | | | |
| 1,2-Dichloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | L | | # | # | # | | | |
| Dibromomethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | # | # | # | | | |
| Bromodichloromethane | <1 µg/l | TM208 | <1 | 4.04 | 3.94 | | | |
| | | | # | # | # | | | |
| cis-1,3-Dichloropropene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | # | # | # | | | |
| Toluene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| | | | # | # | # | | | |
| trans-1,3-Dichloropropene | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| 4407:11 " | | T1 1000 | # | # | # | | | |
| 1,1,2-Trichloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | | |
| 1.2 Diablaran-ana | ۱۱ ا | TMOOO | # | # | # | | | |
| 1,3-Dichloropropane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | | |
| | | | # | # | # | l | I | |

ALS

 SDG:
 200731-86
 Client Reference:
 Galway Historic Landfills
 Report Number:
 564885

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562437

| VOC MS (W) | | | | | | | |
|---|-----------|------------------------------|---------------------------------|---------------------------------|---------------------------------|----------|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| * Subcontracted - refer to subcontractor report | for | Sample Type Date Sampled | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | Ground Water (GW) 30/07/2020 | | |
| accreditation status. ** % recovery of the surrogate standard to check | | Sample Time | | | | | |
| efficiency of the method. The results of indiv compounds within samples aren't corrected | | Date Received | 31/07/2020 200731-86 | 31/07/2020 200731-86 | 31/07/2020 200731-86 | | |
| recovery (F) Trigger breach confirmed | | SDG Ref Lab Sample No.(s) | 22583337 | 22583320 | 22583328 | | |
| 1-3+§@ Sample deviation (see appendix) | | AGS Reference | | | | | |
| Component | LOD/Units | | -4 | -4 | -4 | | |
| Tetrachloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Dibromochloromethane | <1 µg/l | TM208 | <1 | 1.31 | 1.04 | | |
| Dibiofficialie | \1 μg/1 | 1101200 | - " # | # | # | | |
| 1,2-Dibromoethane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,2-Dibrofficetriarie | \1 μg/1 | 1101200 | "# | # | , , , | | |
| Chlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| C.110.10301.1201.10 | . 49 | 200 | . # | . # | . # | | |
| 1,1,1,2-Tetrachloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | 1 0 | | # | # | # | | |
| Ethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| m,p-Xylene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| o-Xylene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Styrene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Bromoform | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | .4 " | T14000 | # | # | # | | |
| Isopropylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,1,2,2-Tetrachloroethane | <1 ug/l | TM208 | # <1 | # <1 | # <1 | | |
| 1,1,2,2-1ettachioroethane | <1 µg/l | 1 101200 | <u> </u> | # | <u> </u> | | |
| 1,2,3-Trichloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,2,0-111011010p10pane | ×1 μg/1 | 1101200 | # | # | # | | |
| Bromobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 213.11336.123.113 | . 49 | 200 | . # | . # | . # | | |
| Propylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| " | , , | | # | # | # | | |
| 2-Chlorotoluene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 1,3,5-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 4-Chlorotoluene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | 4 " | T1 1000 | # | # | # | | |
| tert-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,2,4-Trimethylbenzene | <1 µg/l | TM208 | # <1 | # <1 | # <1 | | |
| 1,2,4-11iilleuryiberizerie | ~1 μg/1 | 1 101200 | <u> </u> | # | <u> </u> | | |
| sec-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| ooc Butyibon20110 | · · pg/ | 1111200 | # | # | # | | |
| 4-iso-Propyltoluene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 15 | | # | # | # | | |
| 1,3-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 1,4-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| n-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 1,2-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 10.5" | 4 0 | T1 1000 | # | # | # | | |
| 1,2-Dibromo-3-chloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,2,4-Trichlorobenzene | <1 ug/l | TM208 | <1 | <1 | <1 | | |
| 1,2,4-111011010DE11ZE11E | <1 µg/l | I IVI∠UO | <u> </u> | <u> </u> | <u> </u> | | |
| Hexachlorobutadiene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| o.aomorobutationo | - , μg/i | 1 141200 | -1 # | 1 | # | | |
| tert-Amyl methyl ether (TAME) | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | . µg/ | 200 | # | # | # | | |
| Naphthalene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | <u> </u> | <u> </u> |
| 1,2,3-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 1,3,5-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | |] |
| | | | | | | | |

ALS

CERTIFICATE OF ANALYSIS

 SDG:
 200731-86
 Client Reference:
 Galway Historic Landfills
 Report Number:
 564885

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562437

Table of Results - Appendix

| | 10.010 01 | Nesults - Appelluix |
|-----------|---|---|
| Method No | Reference | Description |
| SUB | | Subcontracted Test |
| TM043 | Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984 | Determination of alkalinity in aqueous samples |
| TM045 | MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130 | Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids |
| TM046 | Method 4500G, AWWA/APHA, 20th Ed., 1999 | Measurement of Dissolved Oxygen by Oxygen Meter |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water |
| TM099 | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984 | Determination of Ammonium in Water Samples using the Kone Analyser |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser |
| TM107 | ISO 6060-1989 | Determination of Chemical Oxygen Demand using COD Dr Lange Kit |
| TM120 | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970 | Determination of Electrical Conductivity using a Conductivity Meter |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS |
| TM176 | EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of SVOCs in Water by GCMS |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers |
| TM197 | Modified: US EPA Method 8082.EA Method 174 and 5109631 | Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters |
| TM208 | Modified: US EPA Method 8260b & 624 | Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters |
| TM227 | Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500. | Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate |
| TM256 | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter |
| TM343 | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of Selected Pesticides (Suite I) in Liquids by GCMS |
| TM344 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite II) by GCMS |
| TM345 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite III) by GCMS |
| TM411 | Acid_Herbs_GCMS | Acid Herbs in Water by GCMS |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

ALS

SDG: 200731-86 Location: Gort Landfill Client Reference: Order Number: Galway Historic Landfills Z2189 Report Number: Superseded Report: 564885 562437

Test Completion Dates

| • | | | |
|-------------------------------------|--------------|--------------|--------------|
| Lab Sample No(s) | 22583337 | 22583320 | 22583328 |
| Customer Sample Ref. | BH1 | GW01 | GW02 |
| AGS Ref. | | | |
| Depth | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 |
| Туре | Ground Water | Ground Water | Ground Water |
| Acid Herbicides by GCMS | 07-Aug-2020 | 07-Aug-2020 | 07-Aug-2020 |
| Alkalinity as CaCO3 | 06-Aug-2020 | 06-Aug-2020 | 05-Aug-2020 |
| Ammonium Low | 06-Aug-2020 | 06-Aug-2020 | 06-Aug-2020 |
| Anions by Kone (w) | 04-Aug-2020 | 04-Aug-2020 | 04-Aug-2020 |
| BOD True Total | 06-Aug-2020 | 06-Aug-2020 | 06-Aug-2020 |
| COD Unfiltered | 04-Aug-2020 | 04-Aug-2020 | 04-Aug-2020 |
| Conductivity (at 20 deg.C) | 05-Aug-2020 | 05-Aug-2020 | 05-Aug-2020 |
| Cyanide Comp/Free/Total/Thiocyanate | 07-Aug-2020 | 07-Aug-2020 | 07-Aug-2020 |
| Dissolved Metals by ICP-MS | 07-Aug-2020 | 07-Aug-2020 | 07-Aug-2020 |
| Dissolved Oxygen by Probe | 02-Aug-2020 | 02-Aug-2020 | 02-Aug-2020 |
| Faecal Coliforms (W)* | 10-Aug-2020 | 10-Aug-2020 | 10-Aug-2020 |
| Fluoride | 04-Aug-2020 | 04-Aug-2020 | 04-Aug-2020 |
| Mercury Dissolved | 05-Aug-2020 | 05-Aug-2020 | 05-Aug-2020 |
| PCB Congeners - Aqueous (W) | 10-Aug-2020 | 10-Aug-2020 | 10-Aug-2020 |
| Pesticides (Suite I) by GCMS | 06-Aug-2020 | 06-Aug-2020 | 06-Aug-2020 |
| Pesticides (Suite II) by GCMS | 07-Aug-2020 | 07-Aug-2020 | 07-Aug-2020 |
| Pesticides (Suite III) by GCMS | 05-Aug-2020 | 05-Aug-2020 | 05-Aug-2020 |
| pH Value | 04-Aug-2020 | 04-Aug-2020 | 04-Aug-2020 |
| SVOC MS (W) - Aqueous | 09-Aug-2020 | 09-Aug-2020 | 10-Aug-2020 |
| Total Coliforms(W)* | 10-Aug-2020 | 10-Aug-2020 | |
| Total Organic and Inorganic Carbon | 06-Aug-2020 | 06-Aug-2020 | 06-Aug-2020 |
| VOC MS (W) | 05-Aug-2020 | 05-Aug-2020 | 05-Aug-2020 |



ALS Environmental Ltd Torrington Avenue Coventry CV4 9GU

T: +44 (0)24 7642 1213 F: +44 (0)24 7685 6575 www.alsenvironmental.co.uk

08 August 2020

Test Report: COV/1904555/2020

Dear Subcon Results

Subcon Results

Torrington Avenue

Tile Hill CV4 9GU

ALS Life Sciences Limited

Analysis of your sample(s) received on 01 August 2020 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: B. Paige

Title: Microbiology Team Leader







575527 OHS

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

Hawarden Subcon Results ALS Life Sciences Limited Torrington Avenue Tile Hill CV4 9GU

ANALYSED BY





Date of Issue: 08 August 2020

Report Number: COV/1904555/2020

Issue 1

This issue replaces all previous issues

Job Description: 2020 Analysis

Job Location: 200731-86

Number of Samples

included in this report 5

Job Received:

01 August 2020

Number of Test Results

included in this report 7

Analysis Commenced: 01 August 2020

Signed:

Name: B. Paige

Date: 08 August 2020

Title:

Microbiology Team Leader

ALS Environmental Ltd was not responsible for sampling unless otherwise stated

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory. This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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Certificate of Analysis

ANALYSED BY





Report Number:

COV/1904555/2020

Laboratory Number:

19545528

Issue

Sample

of 5

Sample Source:

ALS Life Sciences Limited

Sample Point Description:

Sample Description:

22584567 BH1

Sample Matrix:

Ground Water 30 July 2020

Sample Date/Time: Sample Received:

01 August 2020

Analysis Complete:

08 August 2020

200731-86

Sample Reference:

BH1

| Test Description | Result | Units | Analysis Date | Accre | ditation | Method |
|----------------------------|--------|-----------|---------------|-------|----------|--------|
| Faecal coliforms confirmed | 4 | cfu/100ml | 08/08/2020 | N | Cov | W57 |

Analyst Comments for 19545528:

This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

Microbiology Team Leader

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name:

Title:

B. Paige

Date: 08 August 2020

Signed: /

ANALYSED BY





Report Number:

COV/1904555/2020

Laboratory Number:

19545529

Issue

Sample

of 5

Sample Source:

ALS Life Sciences Limited

Sample Point Description:

Sample Description:

22584568 BH1

Sample Matrix:

Ground Water

Sample Date/Time:

30 July 2020

Sample Received: Analysis Complete: 01 August 2020 08 August 2020

200731-86

Sample Reference:

BH1

| Test Description | Result | Units | Analysis Date | Accre | ditation | Method |
|---------------------------|--------|-----------|---------------|-------|----------|--------|
| Total Coliform presump | >100 | cfu/100ml | 02/08/2020 | Y | Cov | W10 |
| Total Coliforms confirmed | >100 | cfu/100ml | 02/08/2020 | Υ | Cov | W10 |

Analyst Comments for 19545529:

This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Confirmation process not been carried out for coliforms due to nature of the sample.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS,

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD); WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name: B. Paige

Date: 08 August 2020

Signed:

Title: Microbiology Team Leader

ANALYSED BY





Report Number:

COV/1904555/2020

Laboratory Number:

19545530

Issue

Sample

of 5

Sample Source:

ALS Life Sciences Limited

Sample Point Description:

Sample Description: Sample Matrix:

22584558 GW01 **Ground Water**

Sample Date/Time:

30 July 2020

Sample Received:

01 August 2020 08 August 2020

Analysis Complete:

200731-86

Sample Reference: **GW01**

| Test Description | Result | Units | Analysis Date | Accre | ditation | Method |
|---------------------------|--------|-----------|---------------|-------|----------|--------|
| aecal coliforms confirmed | 19 | cfu/100ml | 08/08/2020 | N | Cov | W57 |

Analyst Comments for 19545530:

This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name:

B. Paige

Date: 08 August 2020

Signed: /spaige

Title: Microbiology Team Leader

ANALYSED BY





Report Number:

COV/1904555/2020

Laboratory Number:

19545531

Issue

Sample

of 5

Sample Source:

ALS Life Sciences Limited

Sample Point Description:

Sample Description:

22584559 GW01

Sample Matrix:

Ground Water

Sample Date/Time:

30 July 2020

Sample Received:

01 August 2020

Analysis Complete:

08 August 2020

200731-86

Sample Reference:

GW01

| Test Description | Result | Units | Analysis Date | Accre | ditation | Method |
|---------------------------|--------|-----------|---------------|-------|----------|--------|
| Total Coliform presump | >100 | cfu/100ml | 02/08/2020 | Y | Cov | W10 |
| Total Coliforms confirmed | >100 | cfu/100ml | 02/08/2020 | Υ | Cov | W10 |

Analyst Comments for 19545531:

This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Confirmation process not been carried out for coliforms due to nature of the sample.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS,

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0XD), COV = Otterbourne(SO21 2SW), S = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 0

PTG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

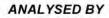
Name: B. Paige

Date: 08 August 2020

Signed:

Title:

Microbiology Team Leader







Report Number:

COV/1904555/2020

Laboratory Number:

19545532

Issue

Sample

of 5

Sample Source:

ALS Life Sciences Limited

Sample Point Description:

Sample Description:

22584565 GW02

Sample Matrix:

Ground Water

Sample Date/Time:

30 July 2020

Sample Received:

01 August 2020

Analysis Complete:

08 August 2020

200731-86

Sample Reference:

GW02

| Test Description | Result | Units | Analysis Date | Accre | ditation | Method |
|----------------------------|--------|-----------|---------------|-------|----------|--------|
| Faecal coliforms confirmed | 620 | cfu/100ml | 08/08/2020 | N | Cov | W57 |

Analyst Comments for 19545532:

This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Name:

B. Paige

Date: 08 August 2020

Signed: / parge

Title: Microbiology Team Leader



ANALYST COMMENTS FOR REPORT COV/1904555/2020

Issue

This issue replaces all previous issues

Date of Issue: 08 August 2020

| Sample No | Analysis Comments | | | | | |
|-----------|--|--|--|--|--|--|
| 19545528 | This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised. | | | | | |
| 19545529 | This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Confirmation process not been carried out for coliforms due to nature of the sample. | | | | | |
| 19545530 | This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised. | | | | | |
| 19545531 | This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Confirmation process not been carried out for coliforms due to nature of the sample. | | | | | |
| 19545532 | This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised. | | | | | |

Signed: /spain

Name: B. Paige

Date: 08 August 2020

Title: Microbiology Team Leader



DETERMINAND COMMENTS FOR REPORT COV/1904555/2020

Date of Issue: 08 August 2020

This issue replaces all previous issues

| Sample No | Description | Determinand | Comments |
|-----------|---------------|------------------------|--|
| 19545529 | 22584568 BH1 | Total Coliform presump | Confirmation process not been carried out for coliforms due to nature of the sample. |
| 19545531 | 22584559 GW01 | Total Coliform presump | Confirmation process not been carried out for coliforms due to nature of the sample. |

Signed: Signed: Name: B. Paige Date: 08 August 2020

Title: Microbiology Team Leader

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 SDG:
 200731-86
 Client Reference:
 Galway Historic Landfills
 Report Number:
 564885

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 562437

Appendix

General

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

| 1 | Container with Headspace provided for volatiles analysis |
|---|---|
| 2 | Incorrect container received |
| 3 | Deviation from method |
| § | Sampled on date not provided |
| • | Sample holding time exceeded in laboratory |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbe stos Type | Common Name |
|---------------------------|----------------|
| Chrysof le | White Asbests |
| Amosite | BrownAsbests |
| Cro d dolite | Blue Asbe stos |
| Fibrous Act nolite | - |
| Fib to us Anthop hyll ite | - |
| Fibrous Tremolite | - |

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017)

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside

> Tel: (01244) 528700 Fax: (01244) 528701

CH5 3US

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:03 September 2020Customer:Fehily TimoneySample Delivery Group (SDG):200826-91

Your Reference: Galway Historic Landfills

Location: Gort Landfill Report No: 565822

This report has been revised and directly supersedes 565524 in its entirety.

We received 3 samples on Wednesday August 26, 2020 and 3 of these samples were scheduled for analysis which was completed on Thursday September 03, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan
Operations Manager







Validated

| SDG: | 200826-91 | Client Reference: | Galway Historic Landfills | Report Number: | 565822 |
|-----------|---------------|-------------------|---------------------------|--------------------|--------|
| Location: | Gort Landfill | Order Number | 72189 | Superseded Report: | 565524 |

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-------------|--------------|
| 22723066 | BH1 | | 0.00 - 0.00 | 25/08/2020 |
| 22723048 | GW01 | | 0.00 - 0.00 | 25/08/2020 |
| 22723058 | GW02 | | 0.00 - 0.00 | 25/08/2020 |

Only received samples which have had analysis scheduled will be shown on the following pages.

| (ALS) |
|-------|

SDG: 200826-91 Client Reference: Galway Historic Landfills Report Number: 565822 Gort Landfill Z2189 Superseded Report: 565524 Location: Order Number: Results Legend 22723066 22723048 22723058 Lab Sample No(s) X Test No Determination Possible Customer **GW01** 뭔1 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00 PR - Process Water 0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent - 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) H2SO4 (ALE244) H2SO4 (ALE244) NaOH (ALE245) NaOH (ALE245) H2SO4 (ALE244) NaOH (ALE245) DW - Drinking Water Non-regulatory 500ml Plastic (ALE208) 500ml Plastic (ALE208) ۷ial Vial (ALE297) Vial (ALE297) UNL - Unspecified Liquid (ALE297) SL - Sludge Container G - Gas OTH - Other GW GW GW Sample Type GW Acid Herbicides by GCMS All NDPs: 0 Tests: 3 Х Χ Χ Alkalinity as CaCO3 NDPs: 0 Tests: 3 X X Χ Ammonium Low All NDPs: 0 Tests: 3 X X X Anions by Kone (w) All NDPs: 0 Tests: 3 X X X BOD True Total All NDPs: 0 Tests: 3 X Х X COD Unfiltered All NDPs: 0 Tests: 3 X Х Х Coliforms (W) All NDPs: 0 Tests: 3 Χ Χ Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 3 Χ Х X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 3 Χ Χ Χ Dissolved Metals by ICP-MS All NDPs: 0 Tests: 3 X X X Dissolved Oxygen by Probe All NDPs: 0 Tests: 1 X Fluoride All NDPs: 0 Tests: 3 X Χ X Mercury Dissolved All NDPs: 0 Tests: 3 X Х Χ PCB Congeners - Aqueous (W) All NDPs: 0 Tests: 3 Х X Х Pesticides (Suite I) by GCMS All NDPs: 0 Tests: 3 Χ X Χ

Validated

CERTIFICATE OF ANALYSIS

| 1 | |
|---|---|
| | 3 |

SDG: 200826-91 Client Reference: Galway Historic Landfills Report Number: 565822 Location: Gort Landfill Z2189 Superseded Report: 565524 Order Number: Results Legend 22723058 22723066 22723048 Lab Sample No(s) X Test No Determination Possible Customer GW02 GW01 뭔1 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00 PR - Process Water 0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent - 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) H2SO4 (ALE244) H2SO4 (ALE244) NaOH (ALE245) NaOH (ALE245) H2SO4 (ALE244) NaOH (ALE245) 500ml Plastic (ALE208) DW - Drinking Water Non-regulatory Vial (ALE297) Vial (ALE297) Vial UNL - Unspecified Liquid .I (ALE297) SL - Sludge Container G - Gas OTH - Other Sample Type GW GW GW GW GW GΜ GW GW GW GΜ GΜ GW GW GW GW Pesticides (Suite II) by GCMS All NDPs: 0 Tests: 3 X X X Pesticides (Suite III) by GCMS All NDPs: 0 Tests: 3 X X Х pH Value All NDPs: 0 Tests: 3 X X X SVOC MS (W) - Aqueous All NDPs: 0 Tests: 3 X X Х All Total Organic and Inorganic Carbon NDPs: 0 Tests: 3 Х X Χ VOC MS (W) All NDPs: 0 Tests: 3 Χ Х Х



SDG: 200826-91 Location: Gort Landfill

26-91 Client Reference: Landfill Order Number: Galway Historic Landfills Z2189 Report Number: Superseded Report: 565822 565524

| D | | | | | | | |
|---|------------------------|------------------------------|------------------------|-----------------------|-----------------------|----------|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | for | Sample Type | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | | |
| accreditation status. ** % recovery of the surrogate standard to check | | Date Sampled Sample Time | 25/08/2020 | 25/08/2020 | 25/08/2020 | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for | lual | Date Received | 26/08/2020 | 26/08/2020 | 26/08/2020 | | |
| recovery (F) Trigger breach confirmed | ,, | SDG Ref Lab Sample No.(s) | 200826-91 22723066 | 200826-91 22723048 | 200826-91 22723058 | | |
| 1-3+§@ Sample deviation (see appendix) | I ODUL-it- | AGS Reference | | | | | |
| Component Coliforms, Total* | LOD/Units MPN/100ml | Method SUB | 345 | 425 | 146 | | |
| | | | | | | | |
| Coliforms, Faecal* | CFU/100ml | SUB | 47 | 2 | 21 | | |
| All II II T . T | 0 " | T14040 | 4050 | 200 | 4400 | | |
| Alkalinity, Total as HCO3 | <2 mg/l | TM043 | 1050 | 382 | 1180 | | |
| BOD, unfiltered | <1 mg/l | TM045 | <1 | 7 | 2.45 | | |
| | | | # | # | # | | |
| Oxygen, dissolved | <0.3 mg/l | TM046 | 9.71 | | | | |
| | | | | | | | |
| Organic Carbon, Total | <3 mg/l | TM090 | 3.29 # | <3 # | 3.33 | | |
| Ammoniacal Nitrogen as N (low | <0.01 mg/l | TM099 | 0.0572 | 0.0516 | ♦ # 0.0745 | | |
| level) | 5.5. mg/l | 55 | # | # | # | | |
| Fluoride | <0.5 mg/l | TM104 | 0.972 | <0.5 | <0.5 | | |
| | | | # | # | # | | |
| COD, unfiltered | <7 mg/l | TM107 | 150 # | 25.6 # | 135 | | |
| Conductivity @ 20 deg.C | <0.02 | TM120 | 0.664 | 0.699 | 0.609 | | |
| 23/14400171, W 20 409.0 | mS/cm | TIVITZU | 0.00 4 # | 0.099 | 0.009 | | |
| Arsenic (diss.filt) | <0.5 µg/l | TM152 | 0.982 | 1.6 | 0.939 | | |
| | | | 2# | 2# | 2# | | |
| Barium (diss.filt) | <0.2 µg/l | TM152 | 23.2 | 20 | 28.9 | | |
| Boron (diss.filt) | <10 µg/l | TM152 | 33.4 | 22.9 | 2 # 17.4 | | |
| Boron (diss.iiit) | 110 µg/1 | TIWITOZ | 2# | 2# | 2# | | |
| Cadmium (diss.filt) | <0.08 µg/l | TM152 | <0.08 | 0.0863 | <0.08 | | |
| | | | 2# | 2# | 2# | | |
| Chromium (diss.filt) | <1 µg/l | TM152 | <1 | <1 | <1 | | |
| Copper (diss.filt) | <0.3 µg/l | TM152 | <0.3 | 2 # 0.895 | 0.932 | | |
| Copper (diss.iiit) | 10.0 дул | TIWITOZ | 2# | 2# | 2# | | |
| Lead (diss.filt) | <0.2 µg/l | TM152 | <0.2 | 1.01 | <0.2 | | |
| | | | 2# | 2# | 2# | | |
| Manganese (diss.filt) | <3 µg/l | TM152 | 15.2 2# | 30.3 | 13.8 2# | | |
| Nickel (diss.filt) | <0.4 µg/l | TM152 | 1.39 | 15 | 4.78 | | |
| THOROT (disc.int) | -0.1 дд/1 | 1111102 | 2# | 2# | 2# | | |
| Phosphorus (diss.filt) | <10 µg/l | TM152 | 19.4 | <10 | <10 | | |
| 2 | | | 2# | 2# | 2# | | |
| Selenium (diss.filt) | <1 µg/l | TM152 | <1 2# | 1.4 2# | 1.07 2# | | |
| Thallium (diss.filt) | <2 µg/l | TM152 | <2 | <2 | <2 | | |
| (| - r-a·· | | 2# | 2# | 2# | | |
| Zinc (diss.filt) | <1 µg/l | TM152 | 1.03 | 10.8 | 2.69 | | |
| 0 1 (5: 5::) | .0.076 | T11157 | 2# | 2# | 2# | | |
| Sodium (Dis.Filt) | <0.076 mg/l | TM152 | 9.23 2 # | 39.5 2# | 9.51 2# | | |
| Magnesium (Dis.Filt) | <0.036 mg/l | TM152 | 7.72 | 15.4 | 8.09 | | |
| J (=) | | | 2# | 2# | 2# | | |
| Potassium (Dis.Filt) | <0.2 mg/l | TM152 | 1.77 | 4.38 | 1.94 | | |
| Oalaine (Dia E'll) | 40.0 " | T14450 | 2# | 2# | 2# | | |
| Calcium (Dis.Filt) | <0.2 mg/l | TM152 | 129 2 # | 102 2# | 128 2 # | | |
| Iron (Dis.Filt) | <0.019 mg/l | TM152 | <0.019 | 0.0433 | <0.019 | | |
| | | | 2# | 2# | 2# | | |
| Mercury (diss.filt) | <0.01 µg/l | TM183 | <0.01 | <0.01 | <0.01 | | |
| Culphoto | -0 " | T14404 | 2# | 2# | 2# | | |
| Sulphate | <2 mg/l | TM184 | 8.1 | 31.2 # | 13.5 # | | |
| Chloride | <2 mg/l | TM184 | 21.4 | 58.6 | 19.4 | | |
| | - | | # | # | # | | |
| Total Oxidised Nitrogen as N | <0.1 mg/l | TM184 | 1.78 | 1.76 | 1.92 | | |
| DCD consen = 00 | -0.04E " | T14407 | # -0.015 | # <0.01E | # <0.015 | | |
| PCB congener 28 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| | | | | | | <u>I</u> | |



SDG: 200826-91 Location: Gort Landfill Client Reference: Order Number: Galway Historic Landfills Z2189 Report Number: Superseded Report: 565822 565524

| Results Legend | | Customer Sample Ref. | BH1 | GW01 | GW02 | 1 | 1 |
|--|------------------------------|------------------------------------|---------------------------------|---------------------------------|---------------------------------|---|---|
| # ISO17025 accredited. M mCERTS accredited. | , | sustomer sample Kei. | BH1 | GW01 | GW02 | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report accreditation status. | for | Sample Type Date Sampled | Ground Water (GW) 25/08/2020 | Ground Water (GW) 25/08/2020 | Ground Water (GW) 25/08/2020 | | |
| ** % recovery of the surrogate standard to checlefficiency of the method. The results of indivi- | k the | Sample Time Date Received | 26/08/2020 | 26/08/2020 | 26/08/2020 | | |
| compounds within samples aren't corrected for | | SDG Ref | 200826-91 | 200826-91 | 200826-91 | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22723066 | 22723048 | 22723058 | | |
| Component PCB congener 52 | LOD/Units <0.015 μg/l | Method TM197 | <0.015 | <0.015 | <0.015 | | |
| 1 Ob congener 32 | (0.015 μg/i | 1101137 | 10.013 | 10.013 | 10.013 | | |
| PCB congener 101 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 118 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 138 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 153 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| PCB congener 180 | <0.015 µg/l | TM197 | <0.015 | <0.015 | <0.015 | | |
| Sum of detected EC7 PCB's | <0.105 µg/l | TM197 | <0.105 | <0.105 | <0.105 | | |
| Cyanide, Total | <0.05 mg/l | TM227 | <0.05 | <0.05 | <0.05 | | |
| pH | <1 pH Units | TM256 | 7.24 # | 7.45 # | 7.29 # | | |
| Trifluralin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| alpha-HCH | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| gamma-HCH (Lindane) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Heptachlor | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Aldrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| beta-HCH | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Isodrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| delta-HCH | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Heptachlor epoxide | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-DDE | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Endosulphan I | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| trans-Chlordane | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| cis-Chlordane | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| p,p'-DDE | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Dieldrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-DDD (TDE) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Endrin | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-DDT | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| p,p'-DDD (TDE) | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Endosulphan II | <0.02 µg/l | TM343 | <0.02 | <0.02 | <0.02 | | |
| p,p'-DDT | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| o,p'-Methoxychlor | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| p,p'-Methoxychlor | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| Endosulphan Sulphate | <0.02 µg/l | TM343 | <0.02 | <0.02 | <0.02 | | |
| | | | | | | | |

565822 565524

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 200826-91
 Client Reference:
 Galway Historic Landfills
 Report Number:

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:

| Results Legend | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
|---|-----------------------------|------------------------------------|---------------------------------|---------------------------------|---------------------------------|--|---|
| # ISO17025 accredited. M mCERTS accredited. | | | BIII | Silvi | O1102 | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| * Subcontracted - refer to subcontractor report | t for | Sample Type Date Sampled | Ground Water (GW) 25/08/2020 | Ground Water (GW) 25/08/2020 | Ground Water (GW) 25/08/2020 | | |
| ** % recovery of the surrogate standard to chec efficiency of the method. The results of indiv | | Sample Time Date Received | 26/08/2020 | 26/08/2020 | 26/08/2020 | | |
| compounds within samples aren't corrected recovery | for the | SDG Ref | 200826-91 22723066 | 200826-91 22723048 | 200826-91 22723058 | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22/23000 | 22123040 | 22/23030 | | |
| Component Permethrin I | LOD/Units <0.01 μg/l | Method TM343 | <0.01 | <0.01 | <0.01 | | |
| remedimi | | 110040 | \0.01 | V0.01 | \0.01 | | |
| Permethrin II | <0.01 µg/l | TM343 | <0.01 | <0.01 | <0.01 | | |
| 1,3,5-Trichlorobenzene | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Hexachlorobutadiene | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| 1,2,4-Trichlorobenzene | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| 1,2,3-Trichlorobenzene | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Dichlorvos | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Dichlobenil | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Mevinphos | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Tecnazene | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Hexachlorobenzene | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Demeton-S-methyl | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Phorate | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Diazinon | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Triallate | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Atrazine | <0.01 µg/l | TM344 | <0.02 | 0.0233 | 0.0125 | | |
| Simazine | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Disulfoton | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Propetamphos | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Chlorpyriphos-methyl | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Dimethoate | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Pirimiphos-methyl | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Chlorpyriphos | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Methyl Parathion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Malathion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Fenthion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Fenitrothion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Triadimefon | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Pendimethalin | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Parathion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Chlorfenvinphos | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| trans-Chlordane | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| cis-Chlordane | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| | | | | I | | | 1 |



SDG: 200826-91 Location: Gort Landfill Client Reference: Order Number: Galway Historic Landfills Z2189 Report Number: Superseded Report: 565822 565524

| Described assert | | | | | | | |
|---|-------------------|------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | Donath (m) | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | | |
| * Subcontracted - refer to subcontractor repo accreditation status. | | Date Sampled | 25/08/2020 | 25/08/2020 | 25/08/2020 | | |
| ** % recovery of the surrogate standard to che efficiency of the method. The results of indi- | eck the vidual | Sample Time Date Received | 26/08/2020 | 26/08/2020 | 26/08/2020 | | |
| compounds within samples aren't corrected recovery | | SDG Ref | 200826-91 | 200826-91 | 200826-91 | | |
| (F) Trigger breach confirmed | | Lab Sample No.(s) | 22723066 | 22723048 | 22723058 | | |
| 1-3+§@ Sample deviation (see appendix) Component | LOD/Units | AGS Reference Method | | | | | |
| Ethion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Carbophenothion | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Triazophos | <0.01 µg/l | TM344 | <0.02 | <0.01 | <0.01 | | |
| Phosalone | <0.01 µg/l | TM344 | <0.04 | <0.01 | <0.01 | | |
| Azinphos methyl | <0.02 µg/l | TM344 | <0.12 | <0.04 | <0.04 | | |
| Azinphos ethyl | <0.02 µg/l | TM344 | <0.08 | <0.02 | <0.02 | | |
| Etridiazole | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Pentachlorobenzene | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Propachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Quintozene (PCNB) | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Omethoate | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Propazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Propyzamide | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Alachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Prometryn | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Telodrin | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Terbutryn | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Chlorothalonil | <0.01 µg/l | TM345 | <0.02 | <0.02 | <0.02 | | |
| Etrimphos | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Metazachlor | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Cyanazine | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Trietazine | <0.01 µg/l | | <0.01 | <0.01 | <0.01 | | |
| Coumaphos | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Phosphamidon I | <0.01 µg/l | TM345 | <0.01 | <0.01 | <0.01 | | |
| Phosphamidon II | <0.01 µg/l | | <0.01 | <0.01 | <0.01 | | |
| Dinitro-o-cresol | <0.1 µg/l | TM411 | <0.1 | <0.2 | 0.283 | | |
| Clopyralid | <0.04 µg/l | TM411 | <0.04 | <0.08 | <0.04 | | |
| MCPA | <0.05 µg/l | TM411 | <0.05 | <0.1 | <0.05 | | |
| Mecoprop | <0.04 µg/l | TM411 | <0.08 | <0.08 | <0.04 | | |
| Dicamba | <0.04 µg/l | TM411 | <0.08 | <0.08 | <0.04 | | |
| МСРВ | <0.05 µg/l | TM411 | <0.1 | <0.1 | <0.05 | | |
| 2,4-DB | <0.1 µg/l | TM411 | <0.2 | <0.2 | <0.1 | | |
| 2,3,6-Trichlorobenzoic acid | <0.05 µg/l | TM411 | <0.05 | <0.1 | <0.05 | | |



SDG:200826-91Client Reference:Galway Historic LandfillsReport Number:565822Location:Gort LandfillOrder Number:Z2189Superseded Report:565524

| Results Legend | | Customer Sample Ref. | BH1 | GW01 | GW02 | <u> </u> | 1 | |
|--|-------------------|------------------------------------|-----------------------|---|-----------------------|----------|--|--|
| # ISO17025 accredited. M mCERTS accredited. | | | bill | CHU1 | 01102 | | | |
| aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | | |
| tot.unfilt Total / unfiltered sample. | | Sample Type | Ground Water (GW) | Ground Water (GW) | Ground Water (GW) | | | |
| Subcontracted - refer to subcontractor report accreditation status. | rt for | Date Sampled | 25/08/2020 | 25/08/2020 | 25/08/2020 | | | |
| ** % recovery of the surrogate standard to che | ck the | Sample Time | | | | | | |
| efficiency of the method. The results of indiv compounds within samples aren't corrected | vidual for the | Date Received | 26/08/2020 | 26/08/2020 | 26/08/2020 | | | |
| recovery | | SDG Ref | 200826-91 22723066 | 200826-91 22723048 | 200826-91 22723058 | | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22720000 | 22720010 | 22/2000 | | | |
| Component | LOD/Units | Method | | | | | | |
| Dichlorprop | <0.1 µg/l | | <0.1 | <0.2 | <0.1 | | | |
| | | | | | | | | |
| Triclopyr | <0.05 µg/l | I TM411 | <0.05 | <0.1 | < 0.05 | | | |
| | J 2000 Jugot | | | • | | | | |
| Fenoprop (Silvex) | <0.1 ua/l | TM411 | <0.1 | <0.2 | <0.1 | | | |
| renoprop (Silvex) | <0.1 µg/l | 1101411 | ~ 0.1 | \0.2 | \0.1 | | | |
| | | | | | | | | |
| 2,4-Dichlorophenoxyacetic acid | <0.05 µg/l | I TM411 | <0.05 | <0.1 | <0.05 | | | |
| | | | | | | | | |
| 2,4,5-Trichlorophenoxyacetic | <0.05 µg/l | I TM411 | <0.1 | <0.1 | <0.1 | | | |
| acid | | | | | | | | |
| Bromoxynil | <0.04 µg/l | I TM411 | <0.04 | <0.08 | <0.04 | | | |
| · · | 1 | 1 | | | | | | |
| Benazolin | <0.04 µg/l | I TM411 | <0.08 | <0.08 | <0.04 | | | |
| · · | υ.υ. μη | | | | "" | | | |
| lovynil | ∠0.05 | I TM411 | <0.05 | <0.1 | <0.05 | | | |
| loxynil | <0.05 µg/l | 1 1W411 | <0.05 | <0.1 | <0.05 | | | |
| <u> </u> | | | | | | | | |
| Pentachlorophenol | <0.04 µg/l | I TM411 | <0.08 | <0.08 | <0.04 | | | |
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| Fluoroxypyr | <0.1 µg/l | TM411 | <0.2 | <0.2 | <0.1 | | | |
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SVOC MS (W) - Aqueous

200826-91 Gort Landfill Galway Historic Landfills Z2189 Report Number: Superseded Report: SDG: Client Reference:

565822 565524 Location: Order Number:

| Results Legend | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
|---|--------------------------|--|--|--|--|--|--|
| # ISO/17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved filtered sample. tot.unfilt Total unfiltered sample. Subcontracted - refer to subcontractor report accreditation status. " recovery of the surrogate standard to chee efficiency of the method. The results of indivicompounds within samples aren't corrected | t for ck the idual | Depth (m) Sample Type Date Sampled Sample Time Date Received | 0.00 - 0.00 Ground Water (GW) 25/08/2020 26/08/2020 | 0.00 - 0.00 Ground Water (GW) 25/08/2020 26/08/2020 | 0.00 - 0.00 Ground Water (GW) 25/08/2020 26/08/2020 | | |
| recovery (F) Trigger breach confirmed | | SDG Ref Lab Sample No.(s) | 200826-91 22723066 | 200826-91 22723048 | 200826-91 22723058 | | |
| 1-3+§@ Sample deviation (see appendix) | LOD/Units | AGS Reference | | | | | |
| 1,2,4-Trichlorobenzene (aq) | <1 µg/l | Method TM176 | <10 # | <1 # | <10 # | | |
| 1,2-Dichlorobenzene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 1,3-Dichlorobenzene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 1,4-Dichlorobenzene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2,4,5-Trichlorophenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2,4,6-Trichlorophenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2,4-Dichlorophenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2,4-Dimethylphenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2,4-Dinitrotoluene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2,6-Dinitrotoluene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2-Chloronaphthalene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2-Chlorophenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2-Methylnaphthalene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2-Methylphenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2-Nitroaniline (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 2-Nitrophenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 3-Nitroaniline (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 4-Bromophenylphenylether (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 4-Chloro-3-methylphenol (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| 4-Chloroaniline (aq) 4-Chlorophenylphenylether (aq) | <1 µg/l | TM176 TM176 | <10 | <1 | <10 <10 | | |
| 4-Methylphenol (aq) | <1 µg/l | TM176 | <10 # <10 | <1 <1 | <10 # <10 | | |
| 4-Nitroaniline (aq) | <1 µg/l | TM176 | <10 # | <1 ** | <10 # | | |
| 4-Nitrophenol (aq) | <1 μg/l | TM176 | <10 # | <1 ** | <10 # | | |
| Azobenzene (aq) | <1 μg/l | TM176 | <10 | <1 | <10 | | |
| Acenaphthylene (aq) | <1 μg/l | TM176 | <10 # | ************************************** | ************************************** | | |
| Acenaphthene (aq) | <1 μg/l | TM176 | <10 # | <1 ** | <10 # | | |
| Anthracene (aq) | <1 μg/l | TM176 | <10 # | <1 ** | <10 # | | |
| bis(2-Chloroethyl)ether (aq) | <1 μg/l | TM176 | <10 # | <1 ** | <10 # | | |
| bis(2-Chloroethoxy)methane | <1 μg/l | TM176 | <10 # | *1 <1 | <10 # | | |
| (aq) bis(2-Ethylhexyl) phthalate (aq) | <2 μg/l | TM176 | <20 | ************************************** | ************************************** | | |
| Butylbenzyl phthalate (aq) | <1 μg/l | TM176 | <10 | ** *********************************** | ************************************** | | |
| Benzo(a)anthracene (aq) | <1 µg/l | TM176 | <10 | # <1 | # <10 | | |
| (-) | . 49/1 | | # | # | # | | |

200826-91 Gort Landfill Galway Historic Landfills Z2189 Report Number: Superseded Report: 565822 565524 SDG: Client Reference: Location: Order Number:

| SVOC MS (W) - Aqueous | 6 | | | | | | |
|---|-----------|------------------------------------|----------------------------------|----------------------------------|----------------------------------|--|--|
| Results Legend # ISO17025 accredited. | (| Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. diss. filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report | for | Depth (m) Sample Type | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | 0.00 - 0.00 Ground Water (GW) | | |
| accreditation status. ** % recovery of the surrogate standard to check | | Date Sampled Sample Time | 25/08/2020 | 25/08/2020 | 25/08/2020 | | |
| efficiency of the method. The results of individ compounds within samples aren't corrected for recovery | | Date Received SDG Ref | 26/08/2020 200826-91 | 26/08/2020 200826-91 | 26/08/2020 200826-91 | | |
| (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) | | Lab Sample No.(s) AGS Reference | 22723066 | 22723048 | 22723058 | | |
| Component | LOD/Units | Method | | | | | |
| Benzo(b)fluoranthene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Benzo(k)fluoranthene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Benzo(a)pyrene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Benzo(g,h,i)perylene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Carbazole (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Chrysene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Dibenzofuran (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| n-Dibutyl phthalate (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Diethyl phthalate (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Dibenzo(a,h)anthracene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Dimethyl phthalate (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| n-Dioctyl phthalate (aq) | <5 µg/l | TM176 | <50 # | <5 # | <50 # | | |
| Fluoranthene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Fluorene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Hexachlorobenzene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Hexachlorobutadiene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Pentachlorophenol (aq) | <1 µg/l | TM176 | <10 | <1 | <10 | | |
| Phenol (aq) | <1 µg/l | TM176 | <10 | <1 | <10 | | |
| n-Nitroso-n-dipropylamine (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Hexachloroethane (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Nitrobenzene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Naphthalene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Isophorone (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Hexachlorocyclopentadiene (aq) | <1 µg/l | TM176 | <10 | <1 | <10 | | |
| Phenanthrene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Indeno(1,2,3-cd)pyrene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| Pyrene (aq) | <1 µg/l | TM176 | <10 # | <1 # | <10 # | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Galway Historic Landfills Z2189 Report Number: Superseded Report: 565822 565524 SDG: Client Reference:

200826-91 Gort Landfill Location: Order Number:

| VOC MS (W) Results Legend | | Customer Sample Ref. | 8114 | 0404 | oures. | | |
|---|--------------------------------|--|--|---|---|--|--|
| # ISO17025 accredited. M mCERTS accredited. Aqueous / settled sample. cliss.filt Dissolved filtered sample. cliss.filt Dissolved filtered sample. ** Subcontracted - refer to subcontractor report fracerditation status. ** % recovery of the surrogate standard to check efficiency of the method. The results of individed compounds within samples aren't corrected for recovery (F) Trigger breach confirmed 1.3+\$@ Sample deviation (see appendix) | for t the dual or the | Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference | BH1 0.00 - 0.00 Ground Water (GW) 25/08/2020 26/08/2020 200826-91 22723066 | GW01 0.00 - 0.00 Ground Water (GW) 25/08/2020 26/08/2020 200826-91 22723048 | GW02 0.00 - 0.00 Ground Water (GW) 25/08/2020 26/08/2020 200826-91 22723058 | | |
| Component Dibromofluoromethane** | LOD/Units % | Method TM208 | 117 | 119 | 116 | | |
| | | | | | | | |
| Toluene-d8** | % | TM208 | 98.2 | 98.7 | 98.5 | | |
| 4-Bromofluorobenzene** | % | TM208 | 97.2 | 97.1 | 97 | | |
| Dichlorodifluoromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Chloromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Vinyl chloride | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Bromomethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Chloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Trichlorofluoromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,1-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Carbon disulphide | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Dichloromethane | <3 µg/l | TM208 | <3 # | <3 # | <3 # | | |
| Methyl tertiary butyl ether (MTBE) | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| trans-1,2-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,1-Dichloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| cis-1,2-Dichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 2,2-Dichloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| Bromochloromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Chloroform | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,1,1-Trichloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,1-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Carbontetrachloride | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,2-Dichloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Benzene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Trichloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,2-Dichloropropane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Dibromomethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Bromodichloromethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| cis-1,3-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Toluene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| trans-1,3-Dichloropropene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,1,2-Trichloroethane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,3-Dichloropropane | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |

ALS

SDG:200826-91Client Reference:Galway Historic LandfillsReport Number:565822Location:Gort LandfillOrder Number:Z2189Superseded Report:565524

| VOC MS (W) | | | | | | | |
|---|---------------|------------------------------|---------------------------------|---------------------------------|---------------------------------|--|--|
| Results Legend # ISO17025 accredited. | | Customer Sample Ref. | BH1 | GW01 | GW02 | | |
| M mCERTS accredited. aq Aqueous / settled sample. | | | | | | | |
| diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. | | Depth (m) | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 | | |
| * Subcontracted - refer to subcontractor report | rt for | Sample Type Date Sampled | Ground Water (GW) 25/08/2020 | Ground Water (GW) 25/08/2020 | Ground Water (GW) 25/08/2020 | | |
| accreditation status. ** % recovery of the surrogate standard to che | | Sample Time | | | | | |
| efficiency of the method. The results of indiv compounds within samples aren't corrected | | Date Received | 26/08/2020 200826-91 | 26/08/2020 200826-91 | 26/08/2020 200826-91 | | |
| recovery (F) Trigger breach confirmed | | SDG Ref Lab Sample No.(s) | 22723066 | 22723048 | 22723058 | | |
| 1-3+§@ Sample deviation (see appendix) | | AGS Reference | | | | | |
| Component | LOD/Units | | .4 | .4 | .4 | | |
| Tetrachloroethene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| Dibromochloromethane | <1 ug/l | TM208 | <1 | <1 | <1 | | |
| Dibiomocniorometrane | <1 µg/l | 1 101200 | - " | " | - " # | | |
| 1,2-Dibromoethane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,2-Dibiofficetrialie | -1 μg/i | 1101200 | - " | " | , , , | | |
| Chlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| C.11676267.125776 | . 129 | 200 | . # | . # | . # | | |
| 1,1,1,2-Tetrachloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Ethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1 | | | # | # | # | | |
| m,p-Xylene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| o-Xylene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Styrene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Bromoform | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Isopropylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 11007. | 4 0 | T1 1000 | # | # | # | | |
| 1,1,2,2-Tetrachloroethane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 4.0.2 Tri-blassess | 44 | TM000 | # | # | # <1 | | |
| 1,2,3-Trichloropropane | <1 µg/l | TM208 | <1 # | <1 # | <u> </u> | | |
| Bromobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| Biomobelizerie | ~1 μg/1 | 1101200 | - " | " | # | | |
| Propylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1 Topyloonizono | i pg/i | 1111200 | # | # | # | | |
| 2-Chlorotoluene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 1,3,5-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| · | | | # | # | # | | |
| 4-Chlorotoluene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| tert-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | | # | | |
| 1,2,4-Trimethylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| B | 4 0 | T1 1000 | # | # | # | | |
| sec-Butylbenzene | <1 µg/l | TM208 | <1 | <1 " | <1 | | |
| 4 ice Propulteluene | <1 · · · · // | TM208 | # <1 | # <1 | # <1 | | |
| 4-iso-Propyltoluene | <1 µg/l | 1 1/12/00 | - " | " | - " # | | |
| 1,3-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,3-Dictiloroperizerie | <1 μg/1 | 1101200 | - " | 1 | # | | |
| 1,4-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1,1 21011010201120110 | i pg/i | 1111200 | # | # | # | | |
| n-Butylbenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | 1.3 | | # | # | # | | |
| 1,2-Dichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| 1,2-Dibromo-3-chloropropane | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | | | | | |
| 1,2,4-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | | # | # | # | | |
| Hexachlorobutadiene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| | | 1 | # | | # | | |
| tert-Amyl methyl ether (TAME) | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| N. 10 1 | 4 " | T1 1000 | # | # | # | | |
| Naphthalene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| 1 2 2 Trioblershannen | 24 # | TMACOO | # | # | # | | |
| 1,2,3-Trichlorobenzene | <1 µg/l | TM208 | <1 # | <1 # | <1 # | | |
| 1,3,5-Trichlorobenzene | <1 µg/l | TM208 | <1 | <1 | <1 | | |
| .,5,6 1110111010101120116 | 1 µg/1 | I IVIZUU | ,,, | , " | ,, | | |
| | | _ | | | | | |

Validated

ALS

CERTIFICATE OF ANALYSIS

 SDG:
 200826-91
 Client Reference:
 Galway Historic Landfills
 Report Number:
 565822

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 565524

Table of Results - Appendix

| | Table of Results - Appendix | | | | | | | | |
|-----------|---|---|--|--|--|--|--|--|--|
| Method No | Reference | Description | | | | | | | |
| SUB | | Subcontracted Test | | | | | | | |
| TM043 | Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984 | Determination of alkalinity in aqueous samples | | | | | | | |
| TM045 | MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130 | Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids | | | | | | | |
| TM046 | Method 4500G, AWWA/APHA, 20th Ed., 1999 | Measurement of Dissolved Oxygen by Oxygen Meter | | | | | | | |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water | | | | | | | |
| TM099 | BS 2690: Part 7:1968 / BS 6068: Part2.11:1984 | Determination of Ammonium in Water Samples using the Kone Analyser | | | | | | | |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser | | | | | | | |
| TM107 | ISO 6060-1989 | Determination of Chemical Oxygen Demand using COD Dr Lange Kit | | | | | | | |
| TM120 | Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970 | Determination of Electrical Conductivity using a Conductivity Meter | | | | | | | |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS | | | | | | | |
| TM176 | EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of SVOCs in Water by GCMS | | | | | | | |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry | | | | | | | |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers | | | | | | | |
| TM197 | Modified: US EPA Method 8082.EA Method 174 and 5109631 | Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters | | | | | | | |
| TM208 | Modified: US EPA Method 8260b & 624 | Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters | | | | | | | |
| TM227 | Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500. | Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate | | | | | | | |
| TM256 | The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4. | Determination of pH in Water and Leachate using the GLpH pH Meter | | | | | | | |
| TM343 | EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of Selected Pesticides (Suite I) in Liquids by GCMS | | | | | | | |
| TM344 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite II) by GCMS | | | | | | | |
| TM345 | EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS) | Determination of selected pesticides (Suite III) by GCMS | | | | | | | |
| TM411 | Acid_Herbs_GCMS | Acid Herbs in Water by GCMS | | | | | | | |

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG:200826-91Client Reference:Galway Historic LandfillsReport Number:565822Location:Gort LandfillOrder Number:Z2189Superseded Report:565524

Test Completion Dates

| Lab Sample No(s) | 22723066 | 22723048 | 22723058 |
|-------------------------------------|--------------|--------------|--------------|
| Customer Sample Ref. | BH1 | GW01 | GW02 |
| · | | | |
| AGS Ref. | | | |
| Depth | 0.00 - 0.00 | 0.00 - 0.00 | 0.00 - 0.00 |
| Туре | Ground Water | Ground Water | Ground Water |
| Acid Herbicides by GCMS | 03-Sep-2020 | 03-Sep-2020 | 03-Sep-2020 |
| Alkalinity as CaCO3 | 29-Aug-2020 | 29-Aug-2020 | 29-Aug-2020 |
| Ammonium Low | 03-Sep-2020 | 03-Sep-2020 | 03-Sep-2020 |
| Anions by Kone (w) | 31-Aug-2020 | 31-Aug-2020 | 31-Aug-2020 |
| BOD True Total | 01-Sep-2020 | 01-Sep-2020 | 01-Sep-2020 |
| COD Unfiltered | 28-Aug-2020 | 28-Aug-2020 | 30-Aug-2020 |
| Coliforms (W) | 02-Sep-2020 | 02-Sep-2020 | 02-Sep-2020 |
| Conductivity (at 20 deg.C) | 27-Aug-2020 | 27-Aug-2020 | 27-Aug-2020 |
| Cyanide Comp/Free/Total/Thiocyanate | 03-Sep-2020 | 03-Sep-2020 | 03-Sep-2020 |
| Dissolved Metals by ICP-MS | 02-Sep-2020 | 02-Sep-2020 | 02-Sep-2020 |
| Dissolved Oxygen by Probe | 28-Aug-2020 | | |
| Fluoride | 01-Sep-2020 | 01-Sep-2020 | 28-Aug-2020 |
| Mercury Dissolved | 03-Sep-2020 | 03-Sep-2020 | 03-Sep-2020 |
| PCB Congeners - Aqueous (W) | 03-Sep-2020 | 03-Sep-2020 | 03-Sep-2020 |
| Pesticides (Suite I) by GCMS | 01-Sep-2020 | 01-Sep-2020 | 01-Sep-2020 |
| Pesticides (Suite II) by GCMS | 01-Sep-2020 | 01-Sep-2020 | 01-Sep-2020 |
| Pesticides (Suite III) by GCMS | 01-Sep-2020 | 01-Sep-2020 | 01-Sep-2020 |
| pH Value | 27-Aug-2020 | 27-Aug-2020 | 27-Aug-2020 |
| SVOC MS (W) - Aqueous | 30-Aug-2020 | 30-Aug-2020 | 30-Aug-2020 |
| Total Organic and Inorganic Carbon | 29-Aug-2020 | 29-Aug-2020 | 01-Sep-2020 |
| VOC MS (W) | 03-Sep-2020 | 03-Sep-2020 | 03-Sep-2020 |





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Customer

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK
CH5 3US

Certificate Of Analysis

Job Number: 20-82835

Issue Number: 1

Report Date: 1 September 2020

Site: Fehily Timoney
PO Number: ALS GLOBAL

Date Samples Received: 27/08/2020

Please find attached the results for the samples received at our laboratory on 27/08/2020.

Should you have any queries regarding the report or require any further services, we would be happy to discuss your requirements. For additional information about the company please log-on to our website at the above address.

Thank you for choosing City Analysts Limited. We look forward to assisting you again.

Authorised By:

Authorised Date: 1

1 September 2020

Louise Morrow

Laure HORREN

Notes are not INAB accredited

Results relate only to the items tested.

Information on methods of analysis and uncertainty of measurement is available on request.

Any opinions or interpretations indicated are outside the scope of our INAB accreditation.

This test report shall not be reproduced except in full or with written approval of City Analysts Limited.

Page 1 of 12 Template: 1146 Revision: 018





Tel: (01) 613 6003 Fax: (01) 613 6008

Email:

reports@cityanalysts.ie

www.cityanalysts.ie

Certificate Of Analysis

Customer

Site:

Customer Services ALS Life Sciences Hawarden Business Park Manor Lane Hawarden, Deeside UK CH5 3US

Fehily Timoney

Sample Description: GW01 - GORT

Sample Type: Ground

Lab Reference Number: 529041 Report Reference: 20-82835 Report Version: 1

Date of Sampling: 26/08/2020 Date Sample Received: 27/08/2020

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) | |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|--|
| D/D1201# | 27/08/2020 | Coliforms | 424.5 | MPN/100ml | 15. | |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 2 | cfu/100ml | | |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water

samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers. TVC - Total viable count





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Certificate Of Analysis

Customer Services ALS Life Sciences

Hawarden Business Park Manor Lane

Hawarden, Deeside UK

CH5 3US

Customer

Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

GW02 - GORT Date of Sampling: 26/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529042

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 145.5 | MPN/100ml | 1 J. |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 21 | cfu/100ml | |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water

samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers. TVC - Total viable count





Tel: (01) 613 6003 Fax: (01) 613 6008

Email:

reports@cityanalysts.ie

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Certificate Of Analysis

Customer **Customer Services**

ALS Life Sciences Hawarden Business Park Manor Lane Hawarden, Deeside

UK CH5 3US Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

BH01 - GORT Date of Sampling: 26/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529043

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 344.8 | MPN/100ml | 156 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 47 | cfu/100ml | |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water

samples.

For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers. TVC - Total viable count





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Certificate Of Analysis

Customer Services

ALS Life Sciences Hawarden Business Park Manor Lane Hawarden, Deeside

UK CH5 3US

Customer

Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

GW01 -NEW INN Date of Sampling: 26/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529044

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 2.0 | MPN/100ml | 1 D4 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | <1 | cfu/100ml | |

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samples.

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ALS Life Sciences Hawarden Business Park Manor Lane Hawarden, Deeside

UK CH5 3US

Sample Type:

Customer

Report Reference: 20-82835

Report Version: 1

Date Sample Received:

Site: Fehily Timoney

Ground

GW02 - NEW INN Date of Sampling: 26/08/2020 Sample Description:

Lab Reference Number: 529045

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 488.4 | MPN/100ml | 1.54 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 10 | cfu/100ml | |

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Hawarden, Deeside

UK CH5 3US

Customer

Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

BH1 - NEW INN Date of Sampling: 26/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529046

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | < 1.0 | MPN/100ml | 1 D4 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | <1 | cfu/100ml | |

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samples.

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Report Reference: 20-82835

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Report Version: 1

Site: Fehily Timoney

Sample Description: BH4 -NEW INN Date of Sampling: 26/08/2020 Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529047

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | < 1.0 | MPN/100ml | 1 5 f |
| D/D3221# | 27/08/2020 | Faecal Coliforms | <1 | cfu/100ml | |

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PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water

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UK CH5 3US

Customer

Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

RC2 - TUAM Date of Sampling: 27/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529048

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 817.0 | MPN/100ml | 1 D4 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 9 | cfu/100ml | |

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samples.

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Site: Fehily Timoney

RC3-TUAM Date of Sampling: 27/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529049

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|---------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 52000.0 | MPN/100ml | 1340 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 2 | cfu/100ml | |

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samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

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Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

Sample Description: 3AP-TUAM Date of Sampling: 27/08/2020 Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529050

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|---------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 17329.0 | MPN/100ml | 1340 |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 740 | cfu/100ml | |

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water

samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.

NAC & ATC - No abnormal change and acceptable to customers. TVC - Total viable count





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Report Reference: 20-82835

Report Version: 1

Site: Fehily Timoney

4AP-TUAM Date of Sampling: 27/08/2020 Sample Description: Sample Type: Ground Date Sample Received: 27/08/2020

Lab Reference Number: 529051

| Site / Method Ref. | Analysis Start Date | Parameter | Result | Units | PV Value (Drinking Water Only) |
|-----------------------|------------------------|------------------|--------|-----------|--------------------------------------|
| D/D1201# | 27/08/2020 | Coliforms | 15.5 | MPN/100ml | 1 Dec |
| D/D3221# | 27/08/2020 | Faecal Coliforms | 1 | cfu/100ml | |

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 SDG:
 200826-91
 Client Reference:
 Galway Historic Landfills
 Report Number:
 565822

 Location:
 Gort Landfill
 Order Number:
 Z2189
 Superseded Report:
 565524

Appendix

General

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

| 1 | Container with Headspace provided for volatiles analysis |
|---|---|
| 2 | Incorrect container received |
| 3 | Deviation from method |
| § | Sampled on date not provided |
| • | Sample holding time exceeded in laboratory |
| @ | Sample holding time exceeded due to late arrival of instructions or samples |

19. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

| Asbe stos Type | Common Name | |
|---------------------------|----------------|--|
| Chrysof le | White Asbests | |
| Amosite | BrownAsbests | |
| Cro d dolite | Blue Asbe stos | |
| Fibrous Act nolite | - | |
| Fib to us Anthop hyll ite | - | |
| Fibrous Tremolite | - | |

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 μ m diameter, longer than 5 μ m and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017)

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



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