



**REPORT ON THE PERFORMANCE OF THE ACTIVITIES
OVER 2021 AT CWMRHYDYCEIRW QUARRY
LANDFILL PURSUANT TO CONDITION 4.2.1 OF THE
ENVIRONMENTAL PERMIT FOR THE SITE NUMBER
TP3835LV**

Report reference: SIG/CW/DFR/1392/01/27746
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APPENDICES

Appendix A	Revised Table HRA 3, Revised Table HRA 6 and the external landfill gas monitoring boreholes emission limit table agreed with NRW in July 2021
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This report has been prepared by MJCA with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between MJCA and the Client. This report is confidential to the client and MJCA accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by MJCA beforehand. Any such party relies upon the report at their own risk.

1. Introduction

- 1.1 This report has been prepared pursuant to Condition 4.2.1 of Environmental Permit (EP) reference TP3835LV (the permit) for the site. Condition 4.2.1 specifies that: -

'A report or reports on the performance of the activities over the previous year shall be submitted to the Agency [Natural Resources Wales (NRW)] by 31 January (or other date agreed in writing by the Agency) each year.'

In an email dated 6 January 2022 National Resources Wales (NRW) agreed with the operator a date of 31 March 2022 for the submission in respect of Condition 4.2.1 of the permit. NRW were notified on 29 March 2022 that the submission would be made by 8 April 2022. The comments from NRW presented in Compliance Assessment Report NRM0037830 dated 31 March 2021 in respect of the report for the 2020 period pursuant to Condition 4.2.1 of the permit have been considered in the preparation of this report for the 2021 period.

- 1.2 The site is not accepting and will not accept waste under the permit with the exception of waste needed to complete the restoration of the former landfill. The restoration of the former landfill area as a recovery activity is the subject of a Waste Recovery Plan¹ (the WRP) which was submitted to NRW pursuant to Pre-Operational Measure J1 of the permit. The WRP was approved by NRW on 18 May 2020².
- 1.3 In January 2018 planning permission was granted to develop housing at and in proximity to Cwmrhydyceirw Quarry. To progress the built development the former landfill area has been capped and partially restored. It is anticipated that restoration works will be completed in the Summer of 2022 as part of the wider development of the residential area. An application to definitely close the landfill will be submitted to NRW on completion of this work. Partial surrender application number EPR/TP3835LV/S005 was issued by NRW on 23 June 2020. The partial surrender removed from the area of the permit the majority of the areas of the site outside the

¹ MJCA, March 2020. Waste Recovery Plan for the deposition of waste on land as a recovery activity for the restoration of Cwmrhydyceirw Quarry, Vicarage Road, Morriston, Swansea to public open space. Report reference SIG/CW/DFR/1392/01.

² Email from Neil Herbert of NRW at 12.31pm on 18 May 2020.

area where waste was deposited previously and varied Table S1.5 of the permit to specify zero tonnes per year in respect of the disposal of inert and non-hazardous waste at the site.

- 1.4** An updated management report³ (the UMR) was provided to NRW on 7 January 2021. The UMR presents details of the leachate, landfill gas, groundwater and surface water management and monitoring infrastructure at the site and details of the monitoring programmes implemented at the site. As the permit was issued in 2008 to reflect the operation of the site as a non-hazardous waste landfill there are many conditions of the permit including those that relate to environmental monitoring which still reflect the proposals in 2008 to operate the site as a non-hazardous landfill. It was agreed with NRW to submit the UMR which reflects the current site circumstances. It is intended that until such time as the application to definitely close the landfill is resubmitted and then determined by NRW the UMR will provide information against which the site can be regulated. The information provided in this submission pursuant to Condition 4.2.1 makes reference, where relevant, to the details presented in the UMR. It is understood that NRW have instigated an application to vary the permit to incorporate the UMR as an operating technique specified in the permit.
- 1.5** Following a review of the UMR, NRW provided comments on the report in an email dated 4 March 2021⁴. NRW agree in their response to the report that the UMR provides a *“framework to develop an interim system to manage the site’s monitoring”*. The agreed changes to Table HRA 3, Table HRA 6 and the external landfill gas monitoring boreholes emission limit table⁵ are presented at Appendix A. Further comments from NRW were provided on 16 December 2021 and are addressed in this report in respect of groundwater quality compliance limits⁶.

³ MJCA, January 2021. Cwmrhydyceirw Quarry Landfill the subject of Environmental Permit reference EPR/TP3835LV. Updated Management Report. Report reference SIG/CW/DFR/1392/01/UMR.

⁴ Email from Neil Herbert of NRW at 17:47pm on 4 March 2021.

⁵ Email from MJCA to Neil Herbert of NRW at 11:40am on 27 July 2021

⁶ Email from Neil Herbert of NRW at 16:35pm on 16 December 2021.

2. Emissions limits

- 2.1** Variation V003 of the permit which was issued by NRW on 30 April 2015 authorises the direct discharge of groundwater and surface water pumped from the sump in the east of the quarry to the Cwmrhydyceirw Stream. The application for variation V003 included an H1 risk assessment for the discharge to the Cwmrhydyceirw Stream and proposed emission limits relevant to the discharge which are included in Table S4.3 of variation V003 of the permit.
- 2.2** The results of the monthly analyses undertaken by Decus Research Limited for samples collected from monitoring point CWMS02 in the sump in the east of the quarry are provided at Appendix B to this report. The data show that the emission limits specified in Table S4.3 were not exceeded during 2021.
- 2.3** The volume of groundwater and/or surface water discharged to the Cwmrhydyceirw Stream during the period January 2021 to December 2021 inclusive was 147,132m³. 147,132m³ is equivalent to an average discharge rate of 0.0047m³/sec which is consistent with the effluent flow rate used in the H1 risk assessment for the discharge to the Cwmrhydyceirw Stream.

3. Leachate, groundwater and surface water quality monitoring

- 3.1** From a review of the data, in general the concentrations of determinants recorded in the leachate, groundwater and surface water during 2021 are consistent with the data for 2015 to 2020.
- 3.2** Ammoniacal nitrogen concentrations in the leachate remained at more than two orders of magnitude greater than those recorded in the groundwater and surface water at the site until May 2021. Ammoniacal nitrogen concentrations in the leachate from May 2021 to December 2021 were of the same order of magnitude as those recorded in the groundwater and surface water at the site. Chloride concentrations in the leachate remain one to two orders of magnitude greater than those recorded in the groundwater at the site and up to an order of magnitude greater than those recorded in the surface water at the site.
- 3.3** Concentrations of ammoniacal nitrogen recorded in the groundwater to the west of the site remained similar to the concentrations recorded in the groundwater elsewhere across the site in 2021 consistent with 2019 and 2020. Groundwater monitoring borehole CWMGW07A was damaged in 2020 and groundwater quality to the west of the site is monitored at boreholes CWMGW07B and CWMGW10. In general, ammoniacal nitrogen concentrations in the groundwater to the north of the site remained below the limit of detection (LOD) of the analytical method used in 2021 consistent with 2020 and the fourth quarter of 2019. Where concentrations were recorded above the LOD the concentrations were low and similar to or at the LOD of 0.01mg/l. Groundwater monitoring borehole CMWGW01B was lost in 2020 and groundwater monitoring borehole CWMGW06A was damaged in 2020 such that it is unserviceable hence groundwater to the north of the site is monitored at boreholes CWMGW11 and CWMGW12. Groundwater monitoring boreholes CMWGW01B and CWMGW06A were decommissioned in October 2021. The ammoniacal nitrogen concentration of 2.1mg/l recorded in the groundwater at borehole CWMGW08 in September 2021 was the highest concentration recorded at the borehole. The previous highest ammoniacal nitrogen concentration of 1.6mg/l was recorded in 2012. The ammoniacal nitrogen concentration in the groundwater at borehole CWMGW08 had fallen back to 0.47mg/l by in November 2021. Borehole CWMGW08 is located to the east-south east of the groundwater and surface water sump.

- 3.4** In general ammoniacal nitrogen and chloride concentrations recorded in the water in the groundwater and surface water sump are higher than those recorded in the groundwater at the monitoring boreholes at the site.
- 3.5** In general the nickel concentrations recorded in the groundwater at the site in 2021 were lower than the concentrations recorded in the leachate. The nickel concentrations in the groundwater at borehole CWMGW10 over 2021 had fallen since 2020 with concentrations similar to the concentrations recorded in the groundwater elsewhere across the site. The nickel concentrations recorded in the groundwater at borehole LFG9 to the south of the site had fallen since 2020 with concentrations by May 2021 similar to the concentrations recorded in the groundwater elsewhere across the site showing that the rising trend recorded in 2020 is no longer seen in the groundwater at the borehole.
- 3.6** In general the cadmium concentrations recorded in the groundwater at boreholes round the site in 2021 were below the LOD. Occasionally cadmium concentrations were recorded above the LOD in 2021 with a maximum concentration of 0.0014mg/l recorded in the groundwater at borehole CWMGW10 in the west of the site in February 2021. Consistent with nickel, the cadmium concentrations recorded in the groundwater at borehole LFG9 had fallen since 2020 with concentrations in 2021 similar to the concentrations recorded in the groundwater elsewhere across the site showing that the rising trend recorded in 2020 is no longer seen in the groundwater at the borehole.
- 3.7** In general the concentrations of metals are higher in the groundwater compared with the water in the combined groundwater and surface water sump.
- 3.8** With the exception of chloride concentrations of 3,540mg/l, 3,750mg/l and 3,260mg/l in May, September and November 2021 respectively, recorded at leachate well L9B/09 the concentrations of parameters in the leachate do not exceed the control level concentrations set in Table HRA 4 of the 2014 Hydrogeological Risk Assessment (HRA). As the concentration of chloride at leachate well L9B/09 exceeds the control level on three consecutive occasions the assessment test in Table HRA 4 has been failed. The data were provided to NRW in the Quarter 4 returns report. The chloride concentrations recorded at leachate well L9B/09 in 2021 are similar to

the control level of 3,130mg/l. The data for the first round of monitoring in 2022 will be reviewed to confirm that the chloride concentrations at leachate well L9B/09 have continued to fall. Should the chloride concentrations at leachate well L9B/09 in remain above the control level of 3,130mg/l in 2022 the monitoring frequency will increase to monthly consistent with the contingency action in Table HRA 4 of the 2014 HRA.

3.9 As stated in our e-mail of 17 February 2016 comprising the response to CAR ID 6048 in respect of the 2014 HRA for the site and in our e-mail dated 13 June 2016 comprising the response to CAR ID 6126 in respect of the 2014 HRA for the site, the groundwater and surface water sump comprises the monitoring point down hydraulic gradient of the existing landfill area and as such should be the location of the water quality compliance monitoring point. Water from the sump currently is discharged to the Cwmrhydyceirw Stream and the discharge is the subject of variation V003 of the permit. The discharge to the stream is the subject of emission limits specified in Table S4.3 variation V003 of the permit. If the limits specified in variation V003 of the permit are breached, the proposals for the management of the discharge to the stream submitted to NRW by e-mail on 29 June 2015 pursuant to improvement Programme Requirement reference 6 of the permit variation are implemented. On this basis no compliance limits or control levels in respect of the 2014 HRA have been set at the groundwater and surface water sump because the quality of the water in the sump is controlled by the emission limits specified for the discharge to the Cwmrhydyceirw Stream. A comparison of the quality of the discharge to the Cwmrhydyceirw Stream with the emission limits specified in Table S4.3 variation V003 of the permit is presented in Section 2 of this report.

3.10 As set out in our submissions dated 17 February 2016 and 13 June 2016, the monitoring regime has continued whereby the quality of the water in the groundwater and surface water sump and the quality of the groundwater at monitoring boreholes located round the site are monitored together with the groundwater level. The data has been reviewed for the purpose of preparing this annual report required by Condition 4.2.1 of the permit.

3.11 It is considered that generally there is no evidence of deteriorating groundwater quality over time in the groundwater at the monitoring boreholes round the site as a

result of the migration of leachate from the landfill. While across the monitoring record there is a falling trend in concentrations of ammoniacal nitrogen recorded in the water in the groundwater and surface water sump, the concentrations have remained relatively stable over 2015 to 2021 inclusive. The falling trend in concentrations of chloride recorded previously in the water in the groundwater and surface water sump continued during 2021.

3.12 NRW confirmed on 16 December 2021^{6 above} that any changes to groundwater compliance limits beyond those set out in Table HRA 5 (Revised V2)^{4 above} have not been agreed with NRW. This is the first time that NRW have responded to the position set out in paragraphs 3.9 and 3.10 of this report despite the fact that this position has been reiterated in the annual monitoring review reports submitted to NRW for the data collected in 2016, 2017, 2018, 2019 and 2020. It is proposed that the position set out in paragraphs 3.9 and 3.10 of this report comprises the “...*interim monitoring approach for all parties, until such time that the permit (including the limits) is reviewed properly*”^{6 above}.

3.13 Irrespective of the position above, there are no exceedances of the groundwater compliance limits presented in Table HRA 5 (Revised V2)^{4 above} over 2021 other than isolated exceedances of the ammoniacal nitrogen at boreholes LFG12BG and CWMGW08 in May and September 2021 respectively. Ammoniacal nitrogen concentrations recorded at these boreholes on all other dates over 2021 have remained below the compliance limits presented in Table HRA 5 (Revised V2).

Annual suite of hazardous substances

3.14 In November 2021 leachate and groundwater samples were analysed for an annual suite of hazardous substances consistent with Table 2a and Table 4a in the UMR and consistent with conditions of the permit together with an extended suite of non-hazardous pollutants. From a review of the leachate data, with the exception of arsenic, antimony, selenium, naphthalene, total petroleum hydrocarbons (TPH), acenaphthene, fluorene, anthracene and fluoranthene the concentrations of determinants recorded in the leachate were below the relevant LODs. Concentrations of arsenic, antimony and selenium of up to 0.0017mg/l, 0.00083mg/l

and 0.0039mg/l respectively were recorded in the leachate. The highest concentration of the Polycyclic Aromatic Hydrocarbons (PAHs) in the leachate comprised a concentration of naphthalene of 0.0101mg/l and TPH of 0.6mg/l.

- 3.15** From a review of the groundwater data, with the exception of fluoride, arsenic, antimony, selenium, uranium and TPH the concentrations of determinands in the annual suite of analysis recorded in the groundwater were below the relevant LODs. The arsenic, antimony, selenium and TPH recorded in the groundwater were lower than albeit similar to those recorded in the leachate at concentrations up to 0.0014mg/l at monitoring borehole LFG2 in the south east of the site, 0.0036mg/l at monitoring borehole LFG2, 0.00095mg/l at monitoring borehole CWMGW11 in the north of the site and 0.4mg/l at monitoring borehole CWMGW08 in the west of the site respectively.
- 3.16** Fluoride concentrations recorded in the groundwater were above the detection limit at all groundwater monitoring locations. The highest fluoride concentration of 0.47mg/l was recorded at monitoring borehole LFG2. Fluoride had not been analysed for in the leachate and has not been analysed for in the groundwater prior to November 2021. A uranium concentration at the LOD of 0.001mg/l was recorded in the groundwater at monitoring borehole CWMGW11 in the north of the site in November 2021.

Monitoring network

- 3.17** Three new groundwater monitoring boreholes (CWMGW10 to CWMGW12) were installed at the site in 2018. The new boreholes were installed primarily to avoid conflict between the built development and existing borehole locations. Groundwater sampling at the newly installed groundwater monitoring boreholes commenced in January 2019 and are included in this annual review. As stated above, groundwater monitoring borehole CMWGW01B was lost in 2020 and groundwater monitoring borehole CWMGW06A was damaged in 2020 such that it is unserviceable. Groundwater monitoring boreholes CMWGW01B and CWMGW06 have been replaced with boreholes CWMGW11 and CWMGW12 to the north of the site. Groundwater monitoring borehole CWMGW07A was damaged in 2020 and has been replaced with borehole CWMGW10 to the west of the site. As presented in the

previous annual monitoring report, in general up to 2020 when the old boreholes were lost or damaged, the concentrations of determinands recorded in groundwater sampled from the groundwater monitoring boreholes installed in 2018 was similar to those recorded previously in groundwater sampled from the corresponding old boreholes that they replaced. Groundwater monitoring borehole CMWGW01 was located and groundwater monitoring boreholes CMWGW01, CWMGW06, CMWGW07A and CWMGW07B were decommissioned in October 2021.

- 3.18** A record of the condition of the in-waste leachate and gas monitoring wells and the perimeter groundwater and external gas monitoring boreholes in 2021 is presented in Table 1. The table includes a record of when wells or boreholes were installed or decommissioned in 2021.

Surface water quality

- 3.19** Surface water monitoring point CWMS02 has emission limits set for the following determinants: suspended solids, ammoniacal nitrogen, chloride, cadmium, nickel, naphthalene and pentachlorophenol. In 2021 all concentrations recorded of these determinants were below the relevant emission limits.
- 3.20** With the exception of ammoniacal nitrogen, the concentrations of determinands with emission limits were similar in the surface water at CWMS02 sampled from the groundwater and surface water sump comprising the discharge from the site to Cwmrhydyceirw Stream, compared with the quality of surface water in the Cwmrhydyceirw Stream upstream of the site at CWMS01, at CWMLS03A and CWMS03B located upstream and downstream respectively of the discharge location and at CWMS05 in the drainage ditch to the south of the site before it enters the Cwmrhydyceirw Stream. The LOD used from May 2021 onwards is an order of magnitude lower than that used previously in the surface water at the site. Ammoniacal nitrogen concentrations recorded throughout 2021 were generally one order of magnitude higher in the groundwater and surface water sump at CWMS02 compared with the Cwmrhydyceirw Stream at CWMS01, CWMS03A and CWMLS03B and one order of magnitude higher or similar to in the groundwater and surface water sump at CWMS02 compared with CWMS05 in the drainage ditch to the south of the site.

- 3.21** In November 2021 surface water samples from the groundwater and surface water sump at CWMS02 were analysed for an annual suite of hazardous substances consistent with Table 5a in the UMR together with an extended suite of non-hazardous pollutants. From a review of the surface water data, with the exception of arsenic, antimony, selenium and naphthalene, concentrations of determinands in the annual suite of analysis recorded in the surface water were below the relevant LODs. The arsenic, antimony, selenium and naphthalene recorded in the groundwater were lower than those recorded in the leachate and groundwater at concentrations of up to 0.00052mg/l at CWMS03B, 0.00071mg/l at CWMS01, 0.00093mg/l at CWMS01 and 0.00024mg/l at CWMS01 of arsenic, antimony, selenium and naphthalene respectively. The concentrations recorded in the water from the surface water and groundwater sump being similar to or lower than the concentrations recorded upstream of the site.

Quality assurance – Laboratory analysis

- 3.22** Consistent with the response to CAR ID NRW0037308⁷ provide to NRW in February 2021⁸, extensive discussions have been held with the laboratories providing services to SI Green UK Limited with the objective of minimising the potential for future issues associated with the sample bottles and associated additives. A schedule of the anticipated monitoring regime several months in advance has also been agreed with the laboratories to further minimise the risk of issues affecting the sampling, analysis and reporting. All laboratory analyses are now carried out by Decus Research Limited. The laboratory LOD are reviewed regularly to confirm consistency with those necessary for compliance monitoring at the site^{9&10}.

⁷ Compliance Assessment Report CAR_NRW0037308 issued by Natural Resources Wales on 6 January 2021 in respect of Q1 to Q3 monitoring submissions

⁸ Schedule 1 to the email from MJCA to Neil Herbert of NRW at 16:55 on 12 February 2021 addressing issues raised in CAR_NRW0037308

⁹ Schedule 2 to the email from MJCA to Neil Herbert of NRW at 16:55 on 12 February 2021 addressing issues raised in CAR_NRW0037428

¹⁰ Compliance Assessment Report CAR_NRW0037428 issued by Natural Resources Wales on 30 January 2021 in respect of Q4 monitoring submissions

4. Groundwater and leachate level monitoring

- 4.1** The groundwater levels recorded in the monitoring boreholes are all above the groundwater level control level and compliance level set in Table HRA 6 from the 2014 HRA (Revised July 2021) (Appendix A) below which the conceptual site model on which the HRA is based may have changed.
- 4.2** The leachate level control level and compliance level are specified in Table HRA 3 from the 2014 HRA (revised July 2021) (Appendix A). Note 1 to Table HRA 3 specifies '*The compliance and assessment limits are based on the six month moving average of all leachate heads recorded at the site between June 2010 and May 2014*' and the assessment test in Table HRA 3 is "*Six month moving average of all leachate heads exceeds the control level on three consecutive occasions*".
- 4.3** Following exceedances of the leachate compliance level in 2020, a Leachate Action Plan was provided to NRW on 12 February 2021 pursuant to Compliance Assessment Reports CAR_NRW0037308 and CAR_NRW0037428. The Leachate Action Plan included an initial detailed survey of the condition and suitability of the existing landfill gas venting and leachate monitoring wells followed by a review of the results of the leachate level monitoring data. The survey was carried out in February 2021 and proposed actions as a result of the survey were provided to NRW in July 2021⁵ above. Consistent with those actions and an approved Construction Quality Assurance Plan (CQA) Plan¹¹, replacement and additional in waste landfill gas venting and leachate monitoring wells were installed at the site in November 2021. A survey of the newly installed wells was completed in January 2022.
- 4.4** The locations of the previously existing and new monitoring wells have been compared with the base of waste model prepared as part of the site investigation undertaken in November and December 2009 referenced in the UMR. The monitoring record for the pre-existing monitoring wells have been reassessed based on the comparison of the leachate levels recorded in metres above Ordnance datum (mAOD) (graph at Appendix C) with the base of waste model and an updated six

¹¹ MJCA, September 2020. Construction Quality Assurance (CQA) Plan for the installation of additional in-waste landfill gas venting and permitter landfill gas monitoring boreholes at Cwmrhydyceirw Quarry Landfill, Morriston, Swansea. Environmental Permit number EPR/TP3835LV. Report reference SIG/CW/KE/20012/01/BHCQA.

month moving average of all leachate heads recorded between June 2010 and May 2014 has been calculated and is presented at Appendix C. Updated control levels and compliance limits are included on the graph Appendix C.

- 4.5** The leachate levels recorded in mAOD since May 2014 are presented on graphs at Appendix C. From the data and the survey carried out in 2021 the leachate levels recorded at well L21 are considered to be spurious between January 2020 and the date the borehole was replaced in November 2021. Versions of the leachate level and leachate level moving average graphs are presented at Appendix C including and excluding this data for well L21. As can be seen on the graphs other spuriously high leachate levels are recorded over limited time periods over 2020 at wells L1C, L6 and L11. Conversely spuriously low leachate levels were recorded at leachate well L23 over 2020. As these data were spurious over limited time period only or these wells have not been replaced to confirm that the data are spurious they have not been excluded from the graphs presented at Appendix C.
- 4.6** As can be seen from the graphs at Appendix C, the six month moving average control level for leachate was exceeded between December 2020 and May 2021 and the compliance limit was exceeded in February and March 2021 where spurious data for leachate well L21 has been omitted. As stated above, other data were spurious over limited time periods in 2020 which may cause or contribute to the exceedances but these wells have not been replaced to confirm whether the data are spurious. The six month moving average leachate level had fallen below the compliance limit by April 2021 and below the control level by June 2021 since when no further exceedances have been recorded. It will be necessary to re-survey the leachate wells at the site once the landfill restoration levels have been achieved and the rotating cowl headworks are installed on the wells. An updated version of Table HRA 3 with the updated leachate level and compliance limits is presented at Table 3 to this report.
- 4.7** The leachate levels at the site have returned to those recorded previously and assumed in the 2014 HRA. The groundwater levels are consistent with those recorded previously at the site and confirm the conceptual model in the 2014 HRA which is based on the assumption that groundwater in proximity to the existing landfill area flows to the combined groundwater and surface water sump.

5. Landfill gas monitoring

- 5.1** The monitoring scheme external to the waste incorporates a series of gas and combined gas and groundwater monitoring boreholes drilled at the site during February and March 2010 and February 2011. A series of new gas monitoring boreholes (LFG17, LFG18, LFG19, LFG20, LFG22, LFG23, LFG24, LFG25, LFG26, LFG27, LFG43, LFG44, LFG45, LFG46, LFG47 and LFG48) were installed at the site between July and September 2018. The new boreholes were installed primarily to avoid conflict between the locations of the built development and the boreholes it was necessary to decommission as the built development progressed. As described in Section 4 above and in Table 1 the following boreholes were decommissioned in October 2021: LFG1, LFG14, LFG15, LFG16, LFG28, LFG29BG, LFG30, LFG31, LFG32BG, LFG33, LFG34, LFG36, LFG37 and LFG38.
- 5.2** As residential properties will be developed on the sandstone shelf adjacent to and south of the former landfill area, owing to the proximity of the development to the former landfill area gas monitoring boreholes LFG39, LFG40, LFG41 and LFG42 were drilled and installed at the site in May 2019 to facilitate gas monitoring between the former landfill area and the proposed development on the sandstone shelf. Additional landfill gas monitoring boreholes LFG49, LFG50 and LFG51 will be installed along the northern boundary of the southern shelf in the base of the quarry equidistant between boreholes LFG39, LFG40, LFG41 and LFG42. It is anticipated that boreholes LFG49, LFG50 and LFG51 will be installed in 2022. With the exception of the landfill gas monitoring boreholes which have been decommissioned as part of the built development, the landfill gas monitoring boreholes located round the boundary of the quarry will be retained. The locations of the boreholes which have been decommissioned and the retained and the proposed new boreholes are shown on Figure 1 (drawing reference SIG/CW/04-22/23096). CQA plans for the decommissioning the landfill gas monitoring boreholes¹² and drilling the new landfill gas monitoring boreholes¹¹ above have been agreed with NRW. The CQA Plan for decommissioning the landfill gas monitoring boreholes also includes several

¹² MJCA, August 2020. Construction Quality Assurance (CQA) Plan for the decommissioning of gas and groundwater monitoring boreholes at Cwmrhydyceirw Quarry Landfill, Morriston, Swansea. Environmental Permit number EPR/TP3835LV. Report reference SIG/CW/JRC/2943/01BHCQADecV2.

groundwater monitoring boreholes. CQA Verification reports are being prepared and will be submitted to NRW shortly.

- 5.3** Landfill gas monitoring undertaken currently at the site is based on the monitoring scheme presented in Table 3a of the UMR and includes monitoring of boreholes external to the waste generally on a monthly basis. The methane concentrations recorded in the boreholes external to the waste during 2021 generally were at or below the limit of detection of 0.1% volume/volume (v/v) of the GA5000 gas monitoring instrument.
- 5.4** With the exception of boreholes LFG16BG and LFG18, no methane concentrations above 1.0% by volume were recorded in any of the boreholes external to the waste during 2021.
- 5.5** It is understood that borehole LFG18 was damaged in July 2019 and was repaired in March 2021. As shown on Figure 1, borehole LFG18 is located approximately 60m west of the former landfill area. Following the repair of the borehole on 3 March 2021 a methane concentration of 1.9% v/v was recorded in borehole LFG18 on 8 March 2021. The monitoring at this borehole was repeated later during the morning of 8 March 2021 and methane concentrations between 2.1 and 1.8% v/v were recorded during a ten-minute period of purging the borehole. The gas flow recorded in borehole LFG18 on 8 March 2021 was 0.9 litres/hour. No methane concentrations above the limit of detection of the GA5000 gas monitoring instrument used were recorded in boreholes LFG14, LFG15, LFG17, LFG19, LFG20 or LFG22 to the west of the former landfill site on 8 March 2021. As there were no properties located in the vicinity of borehole LFG18, as the monitoring data showed that there was a low flow of gas on 8 March 2021 and as no methane was recorded in boreholes LFG14, LFG15, LFG17, LFG19, LFG20 or LFG22 near to borehole LFG18 no immediate further action was necessary with the exception of increasing the monitoring frequency at this location. This approach was confirmed to NRW in an email dated 15 March 2021. A further monitoring visit was undertaken on 12 March 2021 during which a methane concentration of 0.3% was recorded in borehole LFG18. On each of the six (weekly) occasions that borehole LFG18 was monitored during the second half of March 2021 and during April 2021 and on each of the eight (monthly) monitoring occasions that

borehole LFG18 was monitored during the period May 2021 to December 2021 no methane concentrations exceeding the limit of detection of 0.1% v/v were recorded.

- 5.6** A methane concentration of 1.4% v/v was recorded in borehole LFG16BG on 28 January 2021. As shown on Figure 1, borehole LFG16BG is located approximately 80m west of the former landfill area. A repeat measurement was undertaken at this location later in the afternoon of 28 January 2021 and a methane concentration of 1.5% v/v was recorded. A gas flow rate of zero litres/hour was recorded at this borehole on both occasions on which the borehole was monitored on 28 January 2021. No methane concentrations above the limit of detection of the GA5000 gas monitoring instrument used were recorded in boreholes LFG15, LFG17, LFG19, LFG20 or LFG22 to the west of the former landfill site on 28 January 2021. As there were no properties located in the vicinity of borehole LFG16BG, as the monitoring data show that there was no flow of gas on 28 January 2021 and as no methane was recorded in the boreholes adjacent to borehole LFG16BG no immediate further action was necessary with the exception of increasing the monitoring frequency at this location. Further gas readings were recorded at borehole LFG16BG on 31 January 2021, 5 February 2021 and 9 February 2021 and the methane concentrations recorded were 1.5% v/v, 1.7% v/v and 0.9% v/v respectively. During the monitoring visit undertaken on 9 February 2021 the pump on the GA5000 gas monitoring instrument was used to purge gas from borehole LFG16BG and the methane concentration in the borehole fell from 0.9% to 0.1% v/v after 13 minutes of purging. A further monitoring visit was undertaken on 10 February 2021 during which a methane concentration of 0.9% was recorded in borehole LFG16BG. Since the concentration of 1.7% v/v was recorded in borehole LFG16BG on 5 February 2021 no methane concentrations exceeding 1% v/v were recorded in this borehole during the period February 2021 to September 2021. Borehole LFG16BG was decommissioned in October 2021.
- 5.7** Significant earthworks were undertaken in early 2021 in the vicinity of boreholes LFG16BG and LFG18 to progress the built development. The methane concentrations recorded in borehole LFG16BG in January 2021 and February 2021 and the methane concentrations recorded in borehole LFG18 in March 2021 may have been attributable to the earthworks undertaken in the vicinity of the boreholes.

- 5.8** The locations of the combined leachate monitoring and gas venting wells located in the former landfill, including nine new wells that were installed in 2021 primarily to provide additional landfill gas venting capacity, are shown on Figure 1. A CQA plan for the installation of the combined leachate monitoring and gas venting wells¹¹ above was agreed with NRW. The combined leachate and gas venting wells will be converted to facilitate wind assisted passive gas venting in the Summer of 2022 following the completion of the placement of restoration soils at the site. Wind assisted passive gas venting will be provided by fitting new headworks with rotating cowls. A CQA plan¹³ for fitting the new headworks with rotating cowls has been agreed with NRW. Wells L3/09, L14/09 and L21/09 were replaced in 2021 and are now labelled as L3/09R, L14/09R and L21/09R.
- 5.9** The concentrations of methane recorded internal to the waste between January 2021 and December 2021 generally were similar to the concentrations recorded during 2020. With the exception of wells L1C, L6/09, L11/09, L16/09 and L23/09 generally low methane concentrations were recorded in the wells located in the waste. The highest methane concentrations were recorded generally in well L11/09 in the central western part of the former landfill area and occasional elevated methane concentrations were recorded in well L16/09 and in well L23/09 in the north western part of the former landfill area and in well L6/09 in the southern part of the former landfill area. Elevated methane concentrations were recorded in well L1C in the central/south eastern part of the former landfill area during the second half of 2021. Methane concentrations in excess of 70% have been recorded in well L11/09. The high methane concentrations are uncharacteristic of normal landfill gas for which the methane concentration generally does not exceed 65% by volume. Possible mechanisms occurring in the waste which may explain the data are that components of the gas mixture generated in the waste matrix are being removed by passing into solution in the leachate or by absorption onto solid components in the waste thereby increasing the proportion of the remaining components of the landfill gas. Also, the presence of other gaseous hydrocarbons in waste can give a reading on the gas monitoring instrument for methane higher than the true concentration of methane in the gas being measured. It is understood that SI Green use a Geotechnical

¹³ MJCA, August 2020. Specification and Construction Quality Assurance Plan for the installation of gas venting headworks over the gas wells present within the capped landfill area. Report reference SIG/CW/DFR/1392/01.

Instruments GA5000 instrument for gas monitoring at the site. Carbon dioxide is measured by the GA5000 by infrared absorption at a wavelength specific to carbon dioxide so the carbon dioxide reading is not affected by any other gases present in typical landfill gas. The oxygen sensor is a galvanic cell type which Geotechnical Instruments state “...*suffers virtually no influence from CO₂, CO, H₂S, NO₂, SO₂ or H₂...*”. Methane is measured by dual beam infrared absorption which is affected by other hydrocarbon gases such as ethane, propane and butane if present in the gas being measured. The effect is dependent on the relative concentrations of methane and other hydrocarbons and is non-linear. The effect of other hydrocarbons is to give a reading on the instrument for methane higher than the true concentration of methane in the gas being measured. Samples of gas collected from well L11/09 in 2014 and in 2019 for analysis in a laboratory confirm that higher hydrocarbons including ethane, propane, iso-butane, n-butane, iso-pentane and n-hexane were recorded in gas samples from this well.

6. Other reporting requirements

6.1 Condition 4.2.1(b) of the permit states:

where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;

6.2 There are no improvement targets against which to summarise progress. As explained above a Leachate Action Plan was provided to NRW on 12 February 2021 pursuant to Compliance Assessment Reports CAR_NRW0037308 and CAR_NRW0037428. The Leachate Action Plan included an initial detailed survey of the condition and suitability of the existing landfill gas venting and leachate monitoring wells followed by a review of the results of the leachate level monitoring data. The survey was carried out in February 2021 and proposed actions as a result of the survey were provide to NRW in July 2021. Consistent with those actions and an approved CQA Plan, replacement and additional in waste landfill gas venting and leachate monitoring wells were installed at the site in November 2021. A survey of the newly installed wells was completed in January 2022.

6.3 Details of a review of the leachate level monitoring data following completion of the site works and proposals for the ongoing assessment of leachate levels at the site are presented in Section 4 and Table 3 of this report.

6.4 Condition 4.2.1(c) of the permit states:

The report shall include... the energy consumed at the site, reported in the format set out in schedule 5 table S5.3

6.5 The landfill currently is not operating hence the energy consumed at the site is minimal. The only mains powered activity at the site is the pump associated with the combined groundwater and surface water sump. The energy usage at the site for the calendar year 2021 was 101,890kWh (101.89MWh) which is a small increase in the energy usage at the site compared with the calendar year 2020 which was 83,282kWh (83.282MWh).

6.6 Condition 4.2.1(d) of the permit states:

The report shall include...the annual production/treatment set out in schedule 5 table S5.2;

6.7 There was no leachate discharged to sewer in the period January 2021 to December 2021 or during the years 2020 and 2019. There are no emission limits specified in Table S4.4 of the permit in respect of the discharge of leachate to sewer. The volume of groundwater and/or surface water discharged to the Cwmrhydyceirw Stream during the period January 2021 to December 2021 inclusive was 147,132m³ which is similar to the volume of 148,766m³ discharged in 2020. No discharge rate is specified in Table S4.3 of variation V003 of the permit in respect of the discharge of groundwater and surface water to Cwmrhydyceirw Stream. The comparison of discharge water quality with the emission limits specified in Table S4.3 of variation V003 of the permit in respect of the discharge of groundwater and surface water to Cwmrhydyceirw Stream are presented in section 2 of this report.

6.8 Condition 4.2.1(e) of the permit states:

The report shall include... details of any contamination or decontamination of the site which has occurred;

6.9 It is understood that there has been no contamination or decontamination of the site undertaken during the reporting period.

6.10 Condition 4.2.1(f), (g), (h) and (i) of the permit states:

The report shall include...

- (f) the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;*
- (g) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;*
- (h) an assessment of the settlement behaviour of the landfill body based on the difference between the most recent*

topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;

- (i) a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey.*

6.11 Points f, g, h and i are addressed together. The site is not accepting and will not accept waste under the permit with the exception of waste needed to complete the restoration of the former landfill. Restoration soils were imported to the site in 2020 for deposit as a recovery operation to restore the former landfill site consistent with the WRP approved by NRW. Planning permission was granted In January 2018 to develop housing at and in proximity to the quarry. To progress the built development the former landfill area remains insitu and was capped by SI Green UK Limited in late 2018 and early 2019 in accordance with construction proposals which were agreed by NRW pursuant to conditions of the EP.

6.12 Topographical surveys of different areas of the site have been carried out previously and reported to NRW. As the landfill currently is not operating no additional topographic surveys have been undertaken with respect to Condition 3.6.3 in 2021. As the landfill site is not operating no waste has been landfilled at the site during 2021 hence no additional volume of the landfill is occupied by waste. As no waste has been landfilled at the site since the permit was issued in 2008 no assessment of the settlement behaviour of the waste at the site has been carried out. As the site will not be developed as a landfill site and has been capped it is considered that there is no remaining void at the site for waste disposal. The waste input rate for disposal specified in Table S1.5 in the permit is zero. Consistent with the WRP approved by NRW it is proposed that further waste soils will be imported to the site for deposit as a recovery operation in order to complete the restoration of the former landfill site. It is proposed that a topographical survey is carried out when the importation of restoration materials is complete.

Table 1
Status of in waste monitoring wells and external monitoring boreholes

Borehole/ well	Condition¹
In waste leachate and gas monitoring wells	
CWMLS02	
L1C/09	
L3/09	BLOCKED. Replaced with L3/09R in November 2021
L6/09	
L9B/09	
L11/09	
L13/09	BLOCKED
L14/09	Replaced with L14/09R in November 2021
L16/09	BLOCKED. Borehole damaged at ground level. New length of gas pipe put in the position of the hole in January 2021
L19/09	
L21/09	Borehole damaged/blocked. Replaced with L21/09R in November 2021
L23/09	
L26/09	
L01/20	Well installed in November 2021
L02/20	Well installed in November 2021
L03/20	Well installed in November 2021
L04/20	Well installed in November 2021
L05/20	Well installed in November 2021
L06/20	Well installed in November 2021
L07/20	Well installed in November 2021
L08/20	Well installed in November 2021
L09/20	Well installed in November 2021
Groundwater and external gas monitoring boreholes	
CWMGW01b	Replaced with CWMGW12 in 2018. Decommissioned in October 2021
CWMGW03	
CWMGW04	
CWMGW06a	Replaced with CWMGW11 in 2018. Decommissioned in October 2021
CWMGW07a	Replaced with CWMGW10 in 2018. Decommissioned in October 2021
CWMGW07b	Replaced with CWMGW10 in 2018. Decommissioned in October 2021
CWMGW08	
CWMGW09	
CWMGW10	
CWMGW11	
CWMGW12	
LFG1	Decommissioned in October 2021
LFG2	
LFG3	
LFG4	Borehole bottom labelled as blocked
LFG5	
LFG6	Damaged - headworks removed
LFG7BG	
LFG8	

Borehole/ well	Condition ¹
LFG9	
LFG10	
LFG11	
LFG11A	
LFG12BG	
LFG13	
LFG14	Decommissioned in October 2021
LFG15	Decommissioned in October 2021
LFG16BG	Decommissioned in October 2021
LFG17	
LFG18	Damaged in July 2019. Repaired in March 2021
LFG19	
LFG20	
LFG21BG	
LFG22	
LFG23	
LFG24	
LFG25	
LFG26	
LFG27	
LFG28	Decommissioned in October 2021
LFG29BG	MISSING. Decommissioned in October 2021
LFG30	Decommissioned in October 2021
LFG31	Decommissioned in October 2021
LFG32BG	Decommissioned in October 2021
LFG33	MISSNG. Decommissioned in October 2021
LFG34	Decommissioned in October 2021.
LFG35	
LFG36	Decommissioned in October 2021
LFG37	Decommissioned in October 2021
LFG38	Decommissioned in October 2021
LFG39	
LFG40	
LFG41	
LFG42	
LFG43	
LFG44	
LFG45	
LFG46	
LFG47	
LFG48	

¹ Notes from monitoring records. If cell is blank monitoring location is fully operational.

Table 2
Locations and elevations of in-waste monitoring wells

Borehole reference	Easting	Northing	Ground level (mAOD)¹	Estimated base of waste (mAOD)²
L1/20	266496.83	199365.06	43.21	31.84
L2/20	266517.06	199363.17	41.51	32.26
L3/20	266431.43	199341.52	47.40	38.05
L4/20	266512.06	199337.46	42.32	31.94
L5/20	266440.67	199322.26	47.73	31.76
L6/20	266495.50	199329.82	44.73	31.86
L7/20	266424.53	199298.49	47.34	41.57
L8/20	266495.88	199304.29	44.94	33.85
L9/20	266485.60	199259.60	45.57	35.20
L1C/09	266475.92	199289.62	46.50	33.93
L3/09R	266459.43	199276.90	46.34	35.08
L6/09	266442.85	199290.43	46.83	31.27
L9B/09	266474.91	199308.82	46.51	33.92
L11/09	266450.08	119309.16	47.12	31.96
L13/09	266409.39	199309.89	NS	41.30
L14/09R	266522.04	199309.33	39.00	33.99
L16/09	266470.32	199330.09	46.9	31.84
L19/09	266417.70	199320.30	47.18	40.60
L21/09R	266494.64	199350.68	43.84	31.70
L23/09	266450.07	199350.73	45.85	31.33
L26/09	266469.76	199370.25	43.33	35.63

NS Not Surveyed

¹ No highlight: Ground levels taken from January 2022 topographical survey
Highlight: Ground levels taken from March 2021 topographical survey

² Estimated base of waste taken from the base of waste model (SIG-CW-10041revA.LSS) presented in the report of the site investigation undertaken at the site in 2009

Table 3
Table HRA 3 from the 2014 HRA (Revised April 2022)

Proposed compliance limits for the leachate level at Cwmrhydyceirw Quarry Landfill

Criterion objectives		
To detect a permanent rise in leachate levels in the landfill above the levels recorded between June 2010 and May 2014.		
Measurement	Leachate level	
Frequency	Monthly	
Monitoring points	L1C/09, L3/09R, L6/09, L9B/09, L11/09, L14/09R, L16/09, L19/09, L21/09R, L23/09, L26/09, L1/20, L2/20, L3/20, L4/20, L5/20, L6/20, L7/20, L8/20 and L9/20	
Compliance limit¹	4.5m above the base of the waste	
Control level¹	4.0m above the base of the waste	
Assessment test	Six month moving average of all leachate heads exceeds the control level on three consecutive occasions.	
Contingency action	Response time	Responsibility
Advise Natural Resources Wales	24 hours from detection. (Notification via Schedule 6 Part A form)	Environmental manager
Check efficiency of leachate removal systems and initiate contingency actions	One month	Environmental manager
Report to Natural Resources Wales on the appraisal of risks and options for corrective measures.	Three months	Environmental manager
If the risks are acceptable re-evaluate the assessment criteria	Six months	Environmental manager
If the risks are unacceptable implement agreed corrective action	Six months	Environmental manager

¹ The compliance and assessment limits are based on the six month moving average of all leachate heads recorded at the site between November 2010 and May 2014.

APPENDIX A

**REVISED TABLE HRA 3, REVISED TABLE HRA 6 AND THE EXTERNAL LANDFILL
GAS MONITORING BOREHOLES EMISSION LIMIT TABLE AGREED WITH NRW IN
JULY 2021**

Table HRA 3 from the 2014 HRA (Revised July 2021)

Proposed compliance limits for the leachate level at Cwmrhydyceirw Quarry Landfill

Criterion objectives		
To detect a permanent rise in leachate levels in the landfill above the levels recorded between June 2010 and May 2014.		
Measurement	Leachate level	
Frequency	Monthly	
Monitoring points	L1C/09, L3/09R, L6/09, L9B/09, L11/09, L13/09R, L14/09R, L16/09, L19/09, L21/09R, L23/09, L26/09 and CWMLS02 <i>(Note that monitoring points L3/09, L13/09, L14/09 and L21/09 are not functional and will be replaced in the Summer/Autumn 2021. Monitoring points L1/20 to L9/20 will be installed in the Summer/Autumn 2021.)</i>	
Compliance limit ¹	3.0m above the base of the landfill	
Control level ¹	2.5m above the base of the landfill	
Assessment test	Six month moving average of all leachate heads exceeds the control level on three consecutive occasions.	
Contingency action	Response time	Responsibility
Advise Natural Resources Wales	24 hours from detection. (Notification via Schedule 6 Part A form)	Environmental manager
Check efficiency of leachate removal systems and initiate contingency actions	One month	Environmental manager
Report to Natural Resources Wales on the appraisal of risks and options for corrective measures.	Three months	Environmental manager
If the risks are acceptable re-evaluate the assessment criteria	Six months	Environmental manager
If the risks are unacceptable implement agreed corrective action	Six months	Environmental manager

¹ The compliance and assessment limits are based on the six month moving average of all leachate heads recorded at the site between June 2010 and May 2014.

Table HRA 6 from the 2014 HRA (Revised July 2021)

**Contingency action plan for groundwater levels recorded below
the control and compliance limits**

Criterion objectives		
To detect groundwater elevations below the level of the groundwater and surface water sump		
Measurement	Groundwater level	
Frequency	Monthly	
Monitoring points¹	CWMGW03 (replacement), CWMGW04 (replacement), CWMGW08, CWMGW09, LFG2, LFG6, LFG9, LFG12BG, CWMGW10 (replaces monitoring points CWMGW07a and CWMGW07b), CWMGW11 (replaces monitoring point CWMGW06A (shallow)) and CWMGW12 (replaces monitoring point CWMGW01B (shallow)).	
Compliance limit²	32.0mAOD	
Control level³	32.5mAOD	
Assessment test	Groundwater levels recorded below the control level on three consecutive occasions. Groundwater levels recorded below the compliance limit on one occasion.	
Contingency action	Response time	Responsibility
Advise Natural Resources Wales	Within 24 hours of the exceedance. (Notification via Schedule 6 Part A form)	Environmental manager
Report to Natural Resources Wales on the appraisal of risks and options for corrective measures.	Three months	Environmental manager
If the risks are acceptable re-evaluate the assessment criteria	Six months	Environmental manager
If the risks are unacceptable implement agreed corrective action	Six months	Environmental manager

¹ Note that monitoring points CWMGW01B (shallow), CWMGW06A (shallow) and CWMGW07a are no longer functional and have been replaced in the monitoring schedule as has monitoring point CWMGW07b as detailed in the table above.

² The compliance limit comprises the water level for the groundwater and surface water sump as reported in the drainage statement for the revised proposals at the site.

³ The control level is set at the minimum groundwater level recorded round the site between January 2010 and May 2014.

Landfill gas in external monitoring boreholes – limits and requirements

Monitoring point reference /description	Parameter	Limit (including units)	Monitoring frequency	Monitoring standard or method
LFG1 , LFG2, LFG3, LFG4, LFG5, LFG6, LFG7BG, LFG8, LFG9, LFG10, LFG11, LFG11A, LFG12BG, LFG13, LFG14 , LFG15 , LFG16BG , LFG17, LFG18, LFG19, LFG20, LFG21BG, LFG22, LFG23, LFG24, LFG25, LFG26, LFG27, LFG28 , LFG29BG , LFG30 , LFG31 , LFG32BG , LFG33 , LFG34 , LFG35, LFG36 , LFG37 , LFG38 , LFG39, LFG40, LFG41 LFG42, LFG43, LFG44, LFG45, LFG46, LFG47 and LFG48 as shown on drawing reference: SIG/CW/12-20/22162 (dated 6 th Jan 2021). Proposed landfill gas monitoring boreholes LFG49, LFG50 and LFG51 – location as agreed with Natural Resources Wales.	Methane	1.5%	Monthly	Unless otherwise agreed in writing with Natural Resources Wales, Monitoring methods used shall be in accordance with Environment Agency document “Guidance on the management of landfill gas LFTGN03”. Note:*1 A control level of 1.5% is applicable, unless otherwise agreed in writing with Natural Resources Wales.
	Carbon Dioxide	No Limit*1		
	Oxygen	No Limit		
	Atmospheric pressure	No Limit		
	Gas Pressure	No Limit		
	Water Level	No Limit		

The boreholes [identified in blue and underlined](#) will be decommissioned. The replacement boreholes have been installed and are included in the table.

APPENDIX B

**RESULTS OF THE MONTHLY ANALYSES UNDERTAKEN BY DECUS RESEARCH
LIMITED FOR SAMPLES COLLECTED FROM MONITORING POINT CWMS02 IN THE
SUMP OVER 2021**

Beth Jones
SI Green UK Ltd
Suite 1 Killfield House
Viking Way
Llansamlet
Swansea
SA1 7AD

Decus Research Limited
ExCAL House
Capel Hendre Industrial Estate
Ammanford
Carmarthenshire
SA18 3SJ

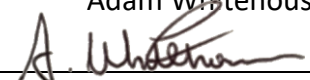
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4999 Rev.2

Project/Site name:	SI Green	Samples Taken:	02-09-2021
Order Number:	Email Confirmation	Samples Received:	02-09-2021
Quotation Number:	DS210303	Date Instructed:	03-09-2021
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	08-10-2021
		Report Issued:	24-03-2022
		Sampled By:	Client

Amendment Records:

*Alkalinity added to Samples 260521019 and 260521012.
Sulphate calculation results corrected.*

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 4999 Rev.2
Results of analysis of 18 samples received
on the 02/09/21

Report Date
24th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				030921008	030921009	030921010	030921011
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW07B	CWM GW08
Sample Date:				02/09/21	02/09/21	02/09/21	02/09/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.0	6.9	7.3	6.9
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	437	594	520	498
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	184	199	161	236
INORG-L12	Ammonia	mg.l^{-1} as N	A	<0.01	0.03	<0.01	2.1
INORG-L13	Chloride	mg.l^{-1}	A	13.5	65.5	13.4	14.4
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	2.7	0.7	5.3	1.7
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	10.7	16.8	11.4	13.0
METALS-L	Sulphate	mg.l^{-1}	A	34.0	21.6	85.6	15.7
-	Total Oxidised Nitrogen	mg.l^{-1} as N	A	2.3	5.4	0.68	2.1
1450	Cadmium	$\mu\text{g.l}^{-1}$	S-A	<0.11	0.20	<0.11	<0.11
METALS-L	Calcium	mg.l^{-1}	A	52.0	61.6	82.8	61.0
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	<1.0	5.0	<1.0
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	<0.8	<0.8	<0.8
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	<0.8	<0.8	3.0	2,480
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	<4.1	14.4	15.4
METALS-L	Magnesium	mg.l^{-1}	A	19.8	27.9	13.7	18.6
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	3.3	530	6.9	706
1450	Mercury	$\mu\text{g.l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	4.2	<1.5	<1.5
METALS-L	Potassium	mg.l^{-1}	A	3.7	4.8	2.9	3.3
METALS-L	Sodium	mg.l^{-1}	A	11.1	16.0	9.5	14.9
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	<1.1	<1.1

* Accreditation Status

Tests marked 'A' hold UKAS accreditation

Tests marked 'N' do not hold UKAS accreditation

Tests marked 'S - A' were sub-contracted to an approved laboratory with accreditation on the specific method

Tests marked 'S - N' were sub-contracted to an approved laboratory without accreditation on the specific method

Any comments or interpretations are beyond the scope of UKAS accreditation



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 4999 Rev.2
Results of analysis of 18 samples received
on the 02/09/21

Report Date
24th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				030921012	030921013	030921014	030921015
Client Sample Reference:				CWM GW09	CWM GW10	CWM GW11	CWM GW12
Sample Date:				02/09/21	02/09/21	02/09/21	02/09/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	6.9	7.3	7.2	6.9
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	542	571	663	329
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	241	257	273	93.4
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.01	0.07	0.01	<0.01
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	16.6	19.1	27.7	23.0
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	4.7	3.6	1.4	3.3
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	16.8	9.7	27.4	21.3
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	37.2	37.0	55.3	32.0
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.89	1.1	1.3	0.75
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	0.30	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	59.8	74.8	96.0	38.6
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	<1.0	<1.0	<1.0
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	0.8	<0.8	<0.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	<0.8	<0.8	<0.8	8.7
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	9.3	<4.1	<4.1	5.7
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	29.1	24.6	22.9	10.5
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	20.6	591	31.1	8.5
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	9.4	<1.5	<1.5
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	3.5	4.2	2.6	1.7
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	11.5	10.1	12.2	13.5
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	<1.1	<1.1

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

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Report Date
24th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				030921016	030921017	030921018	030921019
Client Sample Reference:				LFG2	LFG6	LFG9	LFG12BG
Sample Date:				02/09/21	02/09/21	02/09/21	02/09/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.2	6.4	6.8	7.4
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	518	247	506	471
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	251	86.7	162	190
INORG-L12	Ammonia	mg.l^{-1} as N	A	<0.01	0.08	0.02	0.06
INORG-L13	Chloride	mg.l^{-1}	A	11.1	17.3	27.0	26.8
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	2.0	0.9	2.8	8.8
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	16.8	22.5	35.0	21.4
METALS-L	Sulphate	mg.l^{-1}	A	25.5	12.6	60.8	24.2
-	Total Oxidised Nitrogen	mg.l^{-1} as N	A	2.3	0.76	1.2	1.4
1450	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	mg.l^{-1}	A	82.9	24.6	59.8	59.0
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	<1.0	<1.0	<1.0
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	7.4	<0.8	2.7	<0.8
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	13.0	112	73.2	4.1
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	13.0	<4.1	<4.1	4.3
METALS-L	Magnesium	mg.l^{-1}	A	12.8	10.3	21.5	20.6
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	36.5	570	226	74.3
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	4.2	4.3	<1.5
METALS-L	Potassium	mg.l^{-1}	A	8.5	2.1	4.0	2.9
METALS-L	Sodium	mg.l^{-1}	A	8.2	9.4	12.6	11.3
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	1.2	<1.1	<1.1	<1.1

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Results of analysis of 18 samples received
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Report Date
24th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				030921020	030921021	030921022	030921023
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				02/09/21	02/09/21	02/09/21	02/09/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	8.2	7.6	8.3	8.3
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	376	708	374	374
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{O}_2$	A	<0.4	1.2	<0.4	<0.4
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{O}_2$	A	4	4	<2	<2
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{as CaCO}_3$	A	162	155	95.8	112
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{as N}$	A	0.03	0.75	0.03	0.08
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	49.0	75.2	48.1	48.2
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{O}_2$	A	11.6	8.8	11.3	11.3
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{as N}$	A	1.4	1.3	1.1	0.85
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	22.2	40.0	22.3	22.0
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	41.4	86.0	41.9	42.1
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.9	5.3	5.5	5.3
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.8	0.9	3.1	2.4
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	31.9	11.1	64.9	28.4
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	10.8	9.9	7.4
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	4.4	20.5	4.3	4.3
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.0	5.5	4.4	3.2
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	<1.5	<1.5	<1.5
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	2.4	11.9	2.5	2.5
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	27.3	22.8	26.9	27.1
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	<1.1	<1.1
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	<1.5	2.8	1.6	8.4
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	<0.05	<0.05	<0.05
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	0.13	<0.02	<0.02	<0.02
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	0.2	<0.05	<0.05
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	<0.2	<0.2	<0.2
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{C}$	A	20.0	19.7	19.6	28.4

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Results of analysis of 18 samples received
on the 02/09/21

Report Date
24th March 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				030921024	030921025	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				02/09/21	02/09/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	11.3	7.5	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	N	1,350	16,100	-	-
INORG-L05	COD	$\text{mg.l}^{-1} \text{O}_2$	N	25	1,229	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{as N}$	N	0.19	4.6	-	-
INORG-L13	Chloride	mg.l^{-1}	N	93.0	3,750	-	-
-	Total Oxidised Nitrogen	$\text{mg.l}^{-1} \text{as N}$	N	1.2	<0.07	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	N	11.4	354	-	-
METALS-L	Sulphate	mg.l^{-1}	N	20.8	92.7	-	-
1450	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	<0.11	-	-
METALS-L	Calcium	mg.l^{-1}	N	158	51.6	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	N	6.7	18.7	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	N	12.7	3.8	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	N	1.6	3,530	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	N	15.0	<4.1	-	-
METALS-L	Magnesium	mg.l^{-1}	N	<0.2	60.7	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	N	2.5	344	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	N	4.2	47.2	-	-
METALS-L	Potassium	mg.l^{-1}	N	34.0	374	-	-
METALS-L	Sodium	mg.l^{-1}	N	37.9	988	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	N	<1.1	<1.1	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{as CaCO}_3$	N	360	3,470	-	-

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CERTIFICATE OF ANALYSIS 4999 Rev.2
Results of analysis of 18 samples received
on the 02/09/21

Report Date
24th March 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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CERTIFICATE OF ANALYSIS 4999 Rev.2
Results of analysis of 18 samples received
on the 02/09/21

Report Date
24th March 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

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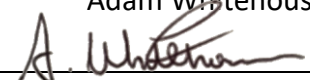
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Certificate of Analysis Number: 4377

Project/Site name:	SI Green	Samples Taken:	28-01-2021
Job Number:	-	Samples Received:	28-01-2021
Order Number:	Signed PAS	Date Instructed:	28-01-2021
Quotation Number:	DS 150606	Analysis Complete:	18-02-2021
Sample Matrix:	Surface Water	Report Issued:	18-02-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4377

Results of analysis of 2 samples received
on the 28/01/21

Report Date
18th February 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				280121005	280121006	-	-
Client Sample Reference:				CWM S02	CWMS05	-	-
Sample Date:				28/01/21	28/01/21	-	-
Sample Matrix:				Surface Water	Surface Water	-	-
INORG-L01	pH	pH units	A	7.4	7.3	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	362	204	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.09	0.01	-	-
INORG-L13	Chloride	mg.l^{-1}	A	25.9	13.7	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	24.4	48.0	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	9.8	9.9	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	43.7	35.9	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	161	91	-	-
INORG-L25	TON	mg.l^{-1}	N	0.47	0.67	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	<0.05	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	0.03	0.01	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	A	<0.05	<0.05	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	A	<0.05	<0.05	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.08	<0.08	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	<1.5	-	-
METALS-L	Calcium	mg.l^{-1}	A	56.8	37.6	-	-
METALS-L	Potassium	mg.l^{-1}	A	8.0	3.6	-	-
METALS-L	Magnesium	mg.l^{-1}	A	11.8	3.2	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	55.0	9.7	-	-
METALS-L	Sulphate	mg.l^{-1}	A	22.4	11.6	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	376	579	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	5.1	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	7.8	6.6	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	3.6	6.0	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.50	<0.50	-	-

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FAO: B. Jones

CERTIFICATE OF ANALYSIS 4377

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on the 28/01/21

Report Date
18th February 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by electrode probe meter (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by colorimetric analysis (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by summation of Nitrate and Nitrite (In-house method)	INORG-L25	None
Determination of Alkalinity in water by colorimetric analysis (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by potentiometric probe meter (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by colorimetric analysis (In-house method)	INORG-L31	None
Determination of total phenol in water by colorimetric analysis (In-house method)	INORG-L20	ISO 17025

* Accreditation Status

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Any comments or interpretations are beyond the scope of UKAS accreditation



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4377

Results of analysis of 2 samples received
on the 28/01/21

Report Date
18th February 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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*****END OF REPORT*****

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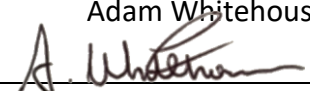
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4469

Project/Site name:	SI Green	Samples Taken:	24-02-2021
Job Number:	-	Samples Received:	24-02-2021
Order Number:	Signed PAS	Date Instructed:	24-02-2021
Quotation Number:	DS 150606	Analysis Complete:	11-03-2021
Sample Matrix:	Surface Water	Report Issued:	15-03-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4469

Results of analysis of 3 samples received
on the 24/02/21

Report Date
15th March 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				240221019	240221020	210221021	-
Client Sample Reference:				CWM S02	CWM S05	Phase 2 Cascade	-
Sample Date:				24/02/21	24/02/21	24/02/21	-
Sample Matrix:				Surface Water	Surface Water	Surface Water	-
INORG-L01	pH	pH units	A	7.4	7.6	8.2	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	377	200	305	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.13	0.03	0.26	-
INORG-L13	Chloride	mg.l^{-1}	A	26.3	16.2	19.7	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	22.4	24.4	623	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	9.2	9.2	8.9	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	24.3	16.0	36.8	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	171	82.4	531	-
INORG-L11	TON	mg.l^{-1}	A	0.33	0.57	1.48	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	<0.05	<0.05	-
INORG-L20	Total Phenol	mg.l^{-1}	A	<0.01	0.03	<0.01	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	A	<0.05	<0.05	<0.05	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	A	<0.05	<0.05	<0.05	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.12	<0.12	<0.12	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	<1.5	2.2	-
METALS-L	Calcium	mg.l^{-1}	A	56.6	30.1	54.2	-
METALS-L	Potassium	mg.l^{-1}	A	7.0	2.4	7.5	-
METALS-L	Magnesium	mg.l^{-1}	A	10.9	2.5	2.5	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	20.9	8.6	18.5	-
METALS-L	Sulphate	mg.l^{-1}	A	24.5	10.6	32.4	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	355	297	445	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	<1.1	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	17.4	12.2	17.8	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	7.8	9.6	12.2	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	2.6	4.3	8.4	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	<0.05	-

* Accreditation Status

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4469

Results of analysis of 3 samples received
on the 24/02/21

Report Date
15th March 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4469

Results of analysis of 3 samples received
on the 24/02/21

Report Date
15th March 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

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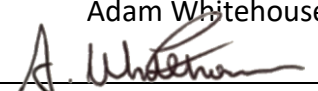
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4509

Project/Site name:	SI Green	Samples Taken:	17-03-2021
Job Number:	-	Samples Received:	17-03-2021
Order Number:	Signed PAS	Date Instructed:	17-03-2021
Quotation Number:	DS 150606	Analysis Complete:	10-04-2021
Sample Matrix:	Surface Water	Report Issued:	14-04-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4509

Results of analysis of 2 samples received
on the 17/03/21

Report Date
14th April 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				170321001	170321002	-	-
Client Sample Reference:				CWM S02	CWM S05	-	-
Sample Date:				17/03/21	17/03/21	-	-
Sample Matrix:				Surface Water	Surface Water	-	-
INORG-L01	pH	pH units	A	7.6	7.8	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	603	201	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.56	0.16	-	-
INORG-L13	Chloride	mg.l^{-1}	A	65.6	17.7	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	3.2	<1.5	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	8.9	9.6	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	66.1	5.9	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	252	70.7	-	-
INORG-L11	TON	mg.l^{-1}	A	0.26	0.78	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	0.06	<0.05	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	<0.01	<0.01	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.12	<0.12	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	<1.5	-	-
METALS-L	Calcium	mg.l^{-1}	A	115	38.9	-	-
METALS-L	Potassium	mg.l^{-1}	A	16.2	2.7	-	-
METALS-L	Magnesium	mg.l^{-1}	A	26.7	3.2	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	215	12.2	-	-
METALS-L	Sulphate	mg.l^{-1}	A	61.7	19.7	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	306	264	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	43.4	21.2	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	<1.0	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	4.8	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	-	-

* Accreditation Status

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4509

Results of analysis of 2 samples received
on the 17/03/21

Report Date
14th April 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4509

Results of analysis of 2 samples received
on the 17/03/21

Report Date
14th April 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

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[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

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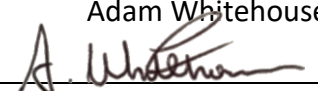
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4590

Project/Site name:	SI Green	Samples Taken:	15-04-2021
Job Number:	-	Samples Received:	15-04-2021
Order Number:	Signed PAS	Date Instructed:	15-04-2021
Quotation Number:	DS 150606	Analysis Complete:	07-05-2021
Sample Matrix:	Surface Water	Report Issued:	12-05-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4590

Results of analysis of 2 samples received
on the 15/04/21

Report Date
12th May 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				150421001	150421002	-	-
Client Sample Reference:				CWM S02	CWM S05	-	-
Sample Date:				15/04/21	15/04/21	-	-
Sample Matrix:				Surface Water	Surface Water	-	-
INORG-L01	pH	pH units	A	7.3	7.5	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	614	168	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.62	0.01	-	-
INORG-L13	Chloride	mg.l^{-1}	A	84.9	16.1	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	7.2	20.0	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	8.9	8.1	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	24.8	16.6	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	272	88.4	-	-
INORG-L11	TON	mg.l^{-1}	A	0.13	0.20	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	<0.05	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	0.02	<0.01	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	<0.05	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.12	<0.12	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	2.6	<1.5	-	-
METALS-L	Calcium	mg.l^{-1}	A	93.1	34.0	-	-
METALS-L	Potassium	mg.l^{-1}	A	13.0	1.7	-	-
METALS-L	Magnesium	mg.l^{-1}	A	20.2	2.2	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	79.7	38.3	-	-
METALS-L	Sulphate	mg.l^{-1}	A	28.8	7.3	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	25.2	135	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	56.5	46.1	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	<1.0	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	<0.8	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	-	-

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4590

Results of analysis of 2 samples received
on the 15/04/21

Report Date
12th May 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4590

Results of analysis of 2 samples received
on the 15/04/21

Report Date
12th May 2021

Disposal Times:

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This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

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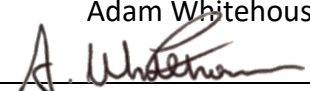
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Certificate of Analysis Number: 4732 Rev.1

Project/Site name:	SI Green	Samples Taken:	26-05-2021
Order Number:	Email Confirmation	Samples Received:	26-05-2021
Quotation Number:	DS210303	Date Instructed:	26-05-2021
Sample Matrix:	Surface Water, Groundwater	Analysis Complete:	16-06-2021
		Report Issued:	29-06-2021
		Sampled By:	Client

Amendment Records:

Alkalinity added to Samples 260521019 and 260521012

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 4732 Rev.1

Report Date
29th June 2021

Results of analysis of 19 samples received
on the 26/05/21

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				260521001	260521002	260521003	260521004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW07B	CWM GW08
Sample Date:				26/05/21	26/05/21	26/05/21	26/05/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.2	7.2	8.0	7.1
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	424	467	450	483
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}$ as CaCO_3	A	183	169	52.0	228
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.01	0.04	<0.01	0.07
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	9.6	41.8	14.1	11.7
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}$ O_2	A	3.2	3.0	2.2	1.1
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}$ C	A	12.5	19.8	4.8	21.8
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	35.7	31.1	174	37.7
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}$ as N	A	0.22	0.53	0.46	<0.07
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.08	<0.08	<0.08	<0.08
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	58.7	54.7	77.0	68.8
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	<1.0	2.3	1.8
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.3	1.4	2.8	1.5
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	14.0	16.0	21.2	1,400
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	18.6	21.1	8.2	22.0
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	3.7	6.3	3.7	704
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.1	2.8	2.0	5.5
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	4.2	3.9	3.6	3.1
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	11.7	14.6	13.7	17.4
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	<1.1	<1.1	3.7

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				260521005	260521006	260521007	260521008
Client Sample Reference:				CWM GW09	CWM GW10	CWM GW11	CWM GW12
Sample Date:				26/05/21	26/05/21	26/05/21	26/05/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.0	7.6	7.5	7.5
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	552	581	626	524
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	240	272	267	232
INORG-L12	Ammonia	mg.l^{-1} as N	A	0.01	0.05	<0.01	0.07
INORG-L13	Chloride	mg.l^{-1}	A	13.9	16.7	23.6	27.3
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	<0.3	1.3	1.8	1.9
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	28.2	23.4	34.8	9.4
METALS-L	Sulphate	mg.l^{-1}	A	71.3	49.7	53.9	26.7
-	Total Oxidised Nitrogen	mg.l^{-1} as N	A	2.0	0.74	0.07	0.24
1450	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.08	<0.08	<0.08	<0.08
METALS-L	Calcium	mg.l^{-1}	A	65.7	83.1	99.9	73.6
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	1.3	1.4	<1.0	1.3
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	1.6	1.9	2.0	1.6
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	10.0	7.0	9.9	11.0
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	4.4	<4.1	<4.1
METALS-L	Magnesium	mg.l^{-1}	A	32.5	25.0	23.2	22.5
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	33.8	974	512	11.4
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	2.3	12.1	4.6	2.5
METALS-L	Potassium	mg.l^{-1}	A	3.3	3.8	2.6	2.9
METALS-L	Sodium	mg.l^{-1}	A	11.8	10.9	13.1	11.9
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	<1.1	<1.1	<1.1

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Report Date
29th June 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				260521009	260521010	260521011	260521013
Client Sample Reference:				LFG2	LFG6	LFG9	LFG12BG
Sample Date:				26/05/21	26/05/21	26/05/21	26/05/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.5	6.9	7.0	6.9
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	528	267	384	318
INORG-L09	Alkalinity	mg.l^{-1} as CaCO_3	A	232	113	161	91.9
INORG-L12	Ammonia	mg.l^{-1} as N	A	0.03	0.15	0.01	2.2
INORG-L13	Chloride	mg.l^{-1}	A	16.1	21.1	15.1	29.2
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	5.7	0.2	3.6	3.7
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	36.3	8.1	14.6	8.0
METALS-L	Sulphate	mg.l^{-1}	A	49.1	10.6	30.6	22.2
-	Total Oxidised Nitrogen	mg.l^{-1} as N	A	0.96	1.3	1.8	0.95
1450	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.08	<0.08	<0.08	<0.08
METALS-L	Calcium	mg.l^{-1}	A	95.3	26.1	49.9	33.2
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	3.5	<1.0	5.9	<1.0
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	11.7	1.5	3.5	1.8
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	72.5	160	132	37.5
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	mg.l^{-1}	A	9.1	9.3	11.9	8.4
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	5.3	406	8.1	4.9
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	1.9	6.2	3.1	2.3
METALS-L	Potassium	mg.l^{-1}	A	8.3	1.9	2.6	1.3
METALS-L	Sodium	mg.l^{-1}	A	8.1	9.7	20.0	13.1
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	1.5	<1.1	<1.1	<1.1

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				260521014	260521015	260521016	260521017
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				26/05/21	26/05/21	26/05/21	26/05/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	8.2	7.6	8.3	8.3
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	284	601	273	285
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	<0.4	2.7	<0.4	<0.4
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	10	11	13	11
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	178	198	69.4	69.1
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.01	0.23	0.06	0.03
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	35.7	55.7	28.0	31.2
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	11.0	7.2	10.5	11.6
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.59	1.2	1.1	0.68
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	10.7	10.9	6.4	7.8
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	16.2	47.1	15.8	17.6
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.12	<0.08	0.08	<0.08
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	31.2	81.8	31.7	37.3
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	6.2	<1.0	<1.0
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.1	2.7	4.2	5.2
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	80.5	72.3	90.2	82.9
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	2.9	15.9	2.8	3.0
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.1	11.9	4.2	4.6
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.6	2.4	3.7	3.8
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	1.8	10.1	1.7	2.5
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	20.2	18.1	18.5	19.6
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.7	<1.1	5.2	3.6
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	<1.5	2.0	1.6	3.6
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	<0.05	<0.05	<0.05
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	0.18	<0.01	<0.01	0.05
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	<0.2	<0.2	<0.2

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Report Date
29th June 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				260521018	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				26/05/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	225	-	-	-
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	1.8	-	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	12	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	66.4	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.03	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	14.3	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	8.8	-	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.29	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	7.8	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	20.8	-	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.08	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	31.9	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	3.0	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	33.4	-	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	2.3	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.8	-	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	1.8	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	1.4	-	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	8.8	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.1	-	-	-
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	1.2	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	-	-	-
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	0.06	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g}\cdot\text{l}^{-1}$	N	<0.05	-	-	-
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				260521019	260521012	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				26/05/21	26/05/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	8.4	7.6	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	N	703	14,330	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	N	15	470	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.08	0.49	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	N	36.1	3,540	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.74	<0.07	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	N	18.9	241	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	N	74.1	17.9	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.29	<0.08	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	N	125	61.9	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.0	15.8	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	N	4.6	2.5	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	N	33.0	2,330	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	N	<4.1	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	N	9.5	57.9	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	N	4.4	510	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	N	2.1	31.7	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	N	5.8	352	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	N	15.7	936	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.1	1.4	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	N	333	3,165	-	-

* Accreditation Status

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 4732 Rev.1

Results of analysis of 19 samples received
on the 26/05/21

Report Date
29th June 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of naphthalene in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 4732 Rev.1

Report Date
29th June 2021

Results of analysis of 19 samples received
on the 26/05/21

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

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[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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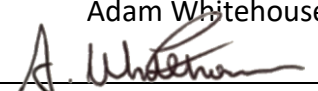
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4820

Project/Site name:	SI Green	Samples Taken:	24-06-2021
Job Number:	-	Samples Received:	24-06-2021
Order Number:	Signed PAS	Date Instructed:	24-06-2021
Quotation Number:	DS 150606	Analysis Complete:	14-07-2021
Sample Matrix:	Surface Water	Report Issued:	20-07-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4820

Results of analysis of 1 sample received on
the 24/06/21

Report Date
20th July 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				240621002	-	-	-
Client Sample Reference:				CWM S02	-	-	-
Sample Date:				24/06/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	573	-	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.37	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	50.9	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	3.2	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	8.5	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	61.1	-	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	226	-	-	-
INORG-L11	TON	mg.l^{-1}	A	0.27	-	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	0.06	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	<0.01	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.12	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	95.8	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	15.7	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	23.7	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	216	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	48.7	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	337	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	40.4	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	<0.8	-	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	-	-	-

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4820

Results of analysis of 1 sample received on
the 24/06/21

Report Date
20th July 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4820

Results of analysis of 1 sample received on
the 24/06/21

Report Date
20th July 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

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[A]: Date of Sampling not supplied

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[D]: Broken Container

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> "Greater Than"

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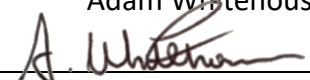
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4898

Project/Site name:	SI Green	Samples Taken:	23-07-2021
Job Number:	-	Samples Received:	23-07-2021
Order Number:	Signed PAS	Date Instructed:	23-07-2021
Quotation Number:	DS 150606	Analysis Complete:	24-08-2021
Sample Matrix:	Surface Water	Report Issued:	26-08-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4898

Results of analysis of 1 sample received on
the 23/07/21

Report Date
26th August 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				230721055	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				23/07/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	700	-	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.52	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	71.6	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	5.6	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	9.7	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	49.6	-	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	283	-	-	-
INORG-L11	TON	mg.l^{-1}	A	0.12	-	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	0.04	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	0.1	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	87.5	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	11.8	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	20.4	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	7.5	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	40.6	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	22.5	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	5.0	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	7.3	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	2.2	-	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	-	-	-

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4898

Results of analysis of 1 sample received on
the 23/07/21

Report Date
26th August 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4898

Results of analysis of 1 sample received on
the 23/07/21

Report Date
26th August 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

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[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

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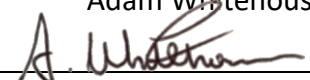
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 4989

Project/Site name:	SI Green	Samples Taken:	31-08-2021
Job Number:	-	Samples Received:	31-08-2021
Order Number:	Signed PAS	Date Instructed:	31-08-2021
Quotation Number:	DS 150606	Analysis Complete:	21-09-2021
Sample Matrix:	Surface Water	Report Issued:	21-09-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4989

Results of analysis of 1 sample received on
the 31/08/21

Report Date
21st September 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				310821003	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				31/08/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.2	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	584	-	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.18	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	31.6	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	12.8	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	8.9	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	1.5	-	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	295	-	-	-
INORG-L11	TON	mg.l^{-1}	A	<0.07	-	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	<0.01	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	79.1	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	6.7	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	22.5	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	361	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	37.7	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	16.7	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	2.1	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	2.6	-	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	-	-	-

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4989

Results of analysis of 1 sample received on
the 31/08/21

Report Date
21st September 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 4989

Results of analysis of 1 sample received on
the 31/08/21

Report Date
21st September 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

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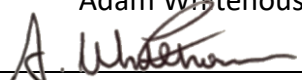
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5152

Project/Site name:	SI Green	Samples Taken:	28-10-2021
Job Number:	-	Samples Received:	28-10-2021
Order Number:	Signed PAS	Date Instructed:	28-10-2021
Quotation Number:	DS 150606	Analysis Complete:	12-11-2021
Sample Matrix:	Surface Water	Report Issued:	15-11-2021
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5152

Results of analysis of 1 sample received on
the 28/10/21

Report Date
15th November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				281021019	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				28/10/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	513	-	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.27	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	24.1	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	6.0	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	9.1	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	8.3	-	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	193	-	-	-
INORG-L11	TON	mg.l^{-1}	A	1.8	-	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	0.05	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	79.7	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	10.8	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	13.0	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	2.4	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	64.8	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	51.6	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	4.7	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	7.3	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	5.1	-	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	-	-	-

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5152

Results of analysis of 1 sample received on
the 28/10/21

Report Date
15th November 2021

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

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Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5152

Results of analysis of 1 sample received on
the 28/10/21

Report Date
15th November 2021

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

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[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

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SA1 7AD

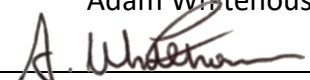
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Certificate of Analysis Number: 5264

Project/Site name:	SI Green	Samples Taken:	30-11-2021
Order Number:	Email Confirmation	Samples Received:	01-12-2021
Quotation Number:	DS210303	Date Instructed:	01-12-2021
Sample Matrix:	Surface Water, Groundwater, Leachate	Analysis Complete:	14-01-2022
		Report Issued:	25-01-2022
		Sampled By:	Client

Amendment Records:

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221001	011221002	011221003	011221004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.5	7.5	7.4	7.2
INORG-L12	Ammonia	mg.l ⁻¹ as N	A	0.12	0.01	0.47	<0.01
INORG-L13	Chloride	mg.l ⁻¹	A	15.0	35.8	14.3	15.4
INORG-L09	Alkalinity	mg.l ⁻¹ as CaCO ₃	A	194	203	261	260
INORG-L18	Total Organic Carbon	mg.l ⁻¹ C	A	23.4	28.9	25.7	13.4
METALS-L	Sulphate	mg.l ⁻¹	A	30.5	29.5	30.9	66.5
INORG-L11	Total Oxidised Nitrogen	mg.l ⁻¹ as N	A	<0.07	<0.07	<0.07	0.12
INORG-L08	Dissolved Oxygen	mg.l ⁻¹ O ₂	A	2.8	4.0	2.1	3.3
INORG-L02	Conductivity	μS.cm ⁻¹	A	437	511	547	615
INORG-L15	Fluoride	mg.l ⁻¹	A	0.38	0.14	0.10	0.11
METALS-L	Nickel	μg.l ⁻¹	A	<1.5	11.6	<1.5	<1.5
1450	Cadmium	μg.l ⁻¹	S-N	<0.11	<0.11	<0.11	<0.11
METALS-L	Copper	μg.l ⁻¹	A	<0.8	4.1	<0.8	<0.8
METALS-L	Manganese	μg.l ⁻¹	A	17.7	315	807	83.5
METALS-L	Iron	μg.l ⁻¹	A	21.6	86.4	234	25.0
METALS-L	Zinc	μg.l ⁻¹	A	<1.1	3.2	<1.1	<1.1
METALS-L	Lead	μg.l ⁻¹	A	<4.1	6.2	<4.1	<4.1
METALS-L	Chromium	μg.l ⁻¹	A	<1.0	<1.0	<1.0	<1.0
METALS-L	Sodium	mg.l ⁻¹	A	11.4	19.9	15.8	11.9
METALS-L	Potassium	mg.l ⁻¹	A	3.5	5.1	3.2	3.4
METALS-L	Calcium	mg.l ⁻¹	A	50.2	58.3	69.7	69.7
METALS-L	Magnesium	mg.l ⁻¹	A	20.7	19.3	21.1	35.0
1450	Mercury	μg.l ⁻¹	S-N	<0.05	<0.05	<0.05	<0.05
1450	Arsenic	μg.l ⁻¹	S-N	<0.20	0.32	0.87	0.21
1450	Selenium	μg.l ⁻¹	S-N	<0.50	<0.50	<0.50	<0.50
1450	Antimony	μg.l ⁻¹	S-N	<0.50	<0.50	<0.50	<0.50
1450	Tellurium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1450	Thallium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1450	Uranium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221001	011221002	011221003	011221004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Naphthalene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	0.4	<0.20
ORG-L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Acenaphthylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Fluorene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Phenanthrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221001	011221002	011221003	011221004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221001	011221002	011221003	011221004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	<0.050
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221001	011221002	011221003	011221004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Report Date
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Laboratory Sample Number:				011221001	011221002	011221003	011221004
Client Sample Reference:				CWM GW03	CWM GW04	CWM GW08	CWM GW09
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	<0.10

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221005	011221006	011221007	011221008
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L01	pH	pH units	A	7.8	7.6	7.7	7.6
INORG-L12	Ammonia	mg.l ⁻¹ as N	A	0.15	<0.01	<0.01	<0.01
INORG-L13	Chloride	mg.l ⁻¹	A	17.4	51.4	26.7	12.1
INORG-L09	Alkalinity	mg.l ⁻¹ as CaCO ₃	A	270	267	323	263
INORG-L18	Total Organic Carbon	mg.l ⁻¹ C	A	46.7	23.8	22.9	20.7
METALS-L	Sulphate	mg.l ⁻¹	A	60.5	97.0	24.4	45.4
INORG-L11	Total Oxidised Nitrogen	mg.l ⁻¹ as N	A	<0.07	0.25	0.41	0.51
INORG-L08	Dissolved Oxygen	mg.l ⁻¹ O ₂	A	1.3	3.6	2.3	1.7
INORG-L02	Conductivity	μS.cm ⁻¹	A	617	819	513	572
INORG-L15	Fluoride	mg.l ⁻¹	A	0.10	0.10	0.12	0.47
METALS-L	Nickel	μg.l ⁻¹	A	6.5	5.2	<1.5	3.2
1450	Cadmium	μg.l ⁻¹	S-N	<0.11	<0.11	<0.11	<0.11
METALS-L	Copper	μg.l ⁻¹	A	1.2	1.8	<0.8	10.5
METALS-L	Manganese	μg.l ⁻¹	A	878	126	180	170
METALS-L	Iron	μg.l ⁻¹	A	8.6	<0.8	15.9	62.8
METALS-L	Zinc	μg.l ⁻¹	A	<1.1	<1.1	<1.1	17.8
METALS-L	Lead	μg.l ⁻¹	A	<4.1	<4.1	<4.1	4.9
METALS-L	Chromium	μg.l ⁻¹	A	<1.0	<1.0	<1.0	<1.0
METALS-L	Sodium	mg.l ⁻¹	A	10.5	17.5	12.0	9.0
METALS-L	Potassium	mg.l ⁻¹	A	4.2	4.5	2.9	12.4
METALS-L	Calcium	mg.l ⁻¹	A	85.3	134	66.1	96.4
METALS-L	Magnesium	mg.l ⁻¹	A	26.5	19.3	21.4	10.2
1450	Mercury	μg.l ⁻¹	S-N	<0.05	<0.05	<0.05	<0.05
1450	Arsenic	μg.l ⁻¹	S-N	0.85	0.51	0.26	1.4
1450	Selenium	μg.l ⁻¹	S-N	0.81	0.95	<0.50	<0.50
1450	Antimony	μg.l ⁻¹	S-N	<0.50	<0.50	<0.50	3.6
1450	Tellurium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1450	Thallium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1450	Uranium	μg.l ⁻¹	S-N	<1.0	1.0	<1.0	<1.0

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Laboratory Sample Number:				011221005	011221006	011221007	011221008
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Naphthalene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	<0.20	<0.20
ORG-L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Acenaphthylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Fluorene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Phenanthrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05

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Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20

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FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
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on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221005	011221006	011221007	011221008
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	<0.050
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221005	011221006	011221007	011221008
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221005	011221006	011221007	011221008
Client Sample Reference:				CWM GW10	CWM GW11	CWM GW12	LFG2
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	<0.10

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221009	011221010	011221011	-
Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				30/11/21	30/11/21	30/11/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
INORG-L01	pH	pH units	A	7.0	6.9	6.9	-
INORG-L12	Ammonia	mg.l ⁻¹ as N	A	0.13	<0.01	<0.01	-
INORG-L13	Chloride	mg.l ⁻¹	A	16.0	28.9	25.5	-
INORG-L09	Alkalinity	mg.l ⁻¹ as CaCO ₃	A	109	144	94.6	-
INORG-L18	Total Organic Carbon	mg.l ⁻¹ C	A	22.1	24.5	22.6	-
METALS-L	Sulphate	mg.l ⁻¹	A	15.3	30.3	19.0	-
INORG-L11	Total Oxidised Nitrogen	mg.l ⁻¹ as N	A	<0.07	0.60	0.64	-
INORG-L08	Dissolved Oxygen	mg.l ⁻¹ O ₂	A	1.8	3.8	6.6	-
INORG-L02	Conductivity	μS.cm ⁻¹	A	268	408	289	-
INORG-L15	Fluoride	mg.l ⁻¹	A	0.19	0.16	0.13	-
METALS-L	Nickel	μg.l ⁻¹	A	2.5	3.4	<1.5	-
1450	Cadmium	μg.l ⁻¹	S-N	<0.11	<0.11	<0.11	-
METALS-L	Copper	μg.l ⁻¹	A	<0.8	2.4	<0.8	-
METALS-L	Manganese	μg.l ⁻¹	A	497	413	19.4	-
METALS-L	Iron	μg.l ⁻¹	A	122	197	45.1	-
METALS-L	Zinc	μg.l ⁻¹	A	<1.1	1.4	<1.1	-
METALS-L	Lead	μg.l ⁻¹	A	<4.1	<4.1	<4.1	-
METALS-L	Chromium	μg.l ⁻¹	A	<1.0	2.4	3.0	-
METALS-L	Sodium	mg.l ⁻¹	A	10.0	14.7	14.6	-
METALS-L	Potassium	mg.l ⁻¹	A	2.1	3.6	1.3	-
METALS-L	Calcium	mg.l ⁻¹	A	32.6	44.0	33.0	-
METALS-L	Magnesium	mg.l ⁻¹	A	8.5	15.5	8.1	-
1450	Mercury	μg.l ⁻¹	S-N	<0.05	<0.05	<0.05	-
1450	Arsenic	μg.l ⁻¹	S-N	0.23	0.30	<0.20	-
1450	Selenium	μg.l ⁻¹	S-N	<0.50	<0.50	<0.50	-
1450	Antimony	μg.l ⁻¹	S-N	<0.50	<0.50	<0.50	-
1450	Tellurium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1450	Thallium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1450	Uranium	μg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-

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Laboratory Sample Number:				011221009	011221010	011221011	-
Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				30/11/21	30/11/21	30/11/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
ORG-L02	Naphthalene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	<0.20	-
ORG-L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	-
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	Acenaphthylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Acenaphthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	Fluorene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	-
ORG-L02	Phenanthrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Chrysene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	-

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Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				30/11/21	30/11/21	30/11/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-

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FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221009	011221010	011221011	-
Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				30/11/21	30/11/21	30/11/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	-
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	-
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	-
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	-
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-

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CERTIFICATE OF ANALYSIS 5264
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on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221009	011221010	011221011	-
Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				30/11/21	30/11/21	30/11/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	-
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	-
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	-
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	-
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	-
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	-
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	-
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	-
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	-
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	-
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	-
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-

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CERTIFICATE OF ANALYSIS 5264
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on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221009	011221010	011221011	-
Client Sample Reference:				LFG6	LFG9	LFG12BG	-
Sample Date:				30/11/21	30/11/21	30/11/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	-
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	-
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	-
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	-
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	-
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	-
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	-

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Report Date
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221012	011221013	011221014	011221015
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L01	pH	pH units	A	8.0	7.5	8.2	8.2
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	319	638	314	315
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	1.9	3.8	2.7	2.7
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	19	15	18	17
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	65.4	233	69.5	67.9
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	<0.01	0.41	<0.01	<0.01
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	55.0	49.2	49.4	48.8
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	10.4	2.5	10.1	10.8
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.74	0.08	0.70	0.75
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	15.7	47.8	14.6	15.1
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	<0.11	<0.11	<0.11
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	28.1	83.3	28.5	28.9
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.2	10.3	7.0	6.5
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	5.1	2.8	4.7	4.8
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	71.7	28.4	94.7	87.5
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	3.2	18.3	3.1	3.1
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.3	175	6.6	5.8
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	<0.05	<0.05
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	<1.5	<1.5	<1.5
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	2.0	9.7	2.0	2.1
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	29.6	18.7	28.5	28.2
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	21.7	<1.1	12.1	13.6
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	<1.5	3.2	<1.5	2.4
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	<0.05	<0.05	<0.05
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	0.06	0.10	0.02	0.02
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.20	<0.20	<0.20	<0.20
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	31.7	14.8	28.4	21.7
1450	Arsenic	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.45	0.43	0.48	0.52
1450	Selenium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.93	<0.50	0.78	0.84
1450	Antimony	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.71	0.60	<0.50	<0.50

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Laboratory Sample Number:				011221012	011221013	011221014	011221015
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
ORG-L02	Naphthalene	µg.l ⁻¹	A	0.24	<0.05	<0.05	<0.05
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	<0.20	<0.20	<0.20
ORG-L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Acenaphthylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Fluorene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Phenanthrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	A	<0.05	<0.05	<0.05	<0.05

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221012	011221013	011221014	011221015
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221012	011221013	011221014	011221015
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	<0.20	<0.20
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	<0.050	<0.050
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221012	011221013	011221014	011221015
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	<10	<10
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	<10	<10
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	<5	<5
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221012	011221013	011221014	011221015
Client Sample Reference:				CWM S01	CWM S02	CWM S03A	CWM S03B
Sample Date:				30/11/21	30/11/21	30/11/21	30/11/21
Sample Matrix:				Surface Water	Surface Water	Surface Water	Surface Water
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	<50	<50
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	<1.0	<1.0
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	<2.0	<2.0
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	<0.010	<0.010
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	<0.10	<0.10
1450	Tellurium	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1450	Thallium	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0
1450	Uranium	µg.l ⁻¹	S-N	<1.0	<1.0	<1.0	<1.0

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
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Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221016	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				30/11/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.8	-	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	A	272	-	-	-
INORG-L06.1	BOD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	7.6	-	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	21	-	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	A	91.8	-	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	<0.01	-	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	A	20.6	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	A	5.8	-	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	A	0.20	-	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	A	20.9	-	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	A	39.3	-	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	A	6.9	-	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	A	2.5	-	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	A	379	-	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	A	<4.1	-	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	A	3.4	-	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	A	3.9	-	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	-	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	A	<1.5	-	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	A	2.0	-	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	A	11.3	-	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	A	4.8	-	-	-
INORG-L10	Suspended Solids	$\text{mg}\cdot\text{l}^{-1}$	A	7.6	-	-	-
INORG-L31	Cyanide	$\text{mg}\cdot\text{l}^{-1}$	A	<0.05	-	-	-
INORG-L20	Total Phenols	$\text{mg}\cdot\text{l}^{-1}$	A	<0.02	-	-	-
ORG-L01	TPH	$\text{mg}\cdot\text{l}^{-1}$	N	<0.20	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	A	20.3	-	-	-
1450	Arsenic	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.33	-	-	-
1450	Selenium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.50	-	-	-
1450	Antimony	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.50	-	-	-

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CERTIFICATE OF ANALYSIS 5264
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Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221016	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				30/11/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
ORG-L02	Naphthalene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	-	-	-
ORG-L17	Mecoprop	µg.l ⁻¹	A	<0.1	-	-	-
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Acenaphthylene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Acenaphthene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Fluorene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	-	-	-
ORG-L02	Phenanthrene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Anthracene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Fluoranthene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Pyrene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Chrysene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	A	<0.05	-	-	-
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	A	<0.05	-	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221016	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				30/11/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	-	-	-
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Atraton	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Butylate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	-	-	-

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Laboratory Sample Number:				011221016	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				30/11/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	EPTC	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	MGK	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Molinate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	-	-	-
1830	Prometon	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Propazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Prophos	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Simazine	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	-	-	-
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	-	-	-
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	-	-	-
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	Bromomethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221016	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				30/11/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Benzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	-	-	-
1760	Toluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	-	-	-
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	-	-	-
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	-	-	-
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Styrene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	-	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221016	-	-	-
Client Sample Reference:				CWM S05	-	-	-
Sample Date:				30/11/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	-	-	-
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	-	-	-
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	-	-	-
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	-	-	-
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	-	-	-
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	-	-	-
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	-	-	-
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	-	-	-
1450	Tellurium	µg.l ⁻¹	S-N	<1.0	-	-	-
1450	Thallium	µg.l ⁻¹	S-N	<1.0	-	-	-
1450	Uranium	µg.l ⁻¹	S-N	<1.0	-	-	-

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Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221017	011221018	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				30/11/21	30/11/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
INORG-L01	pH	pH units	N	10.9	7.7	-	-
INORG-L02	Conductivity	$\mu\text{S}\cdot\text{cm}^{-1}$	N	503	14,240	-	-
INORG-L05	COD	$\text{mg}\cdot\text{l}^{-1}\text{ O}_2$	N	10	948	-	-
INORG-L12	Ammonia	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.79	0.80	-	-
INORG-L13	Chloride	$\text{mg}\cdot\text{l}^{-1}$	N	48.8	3,260	-	-
-	Total Oxidised Nitrogen	$\text{mg}\cdot\text{l}^{-1}\text{ as N}$	N	0.54	<0.07	-	-
INORG-L18	Total Organic Carbon	$\text{mg}\cdot\text{l}^{-1}\text{ C}$	N	48.9	251	-	-
METALS-L	Sulphate	$\text{mg}\cdot\text{l}^{-1}$	N	43.5	15.6	-	-
1450	Cadmium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.11	<0.11	-	-
METALS-L	Calcium	$\text{mg}\cdot\text{l}^{-1}$	N	53.2	57.0	-	-
METALS-L	Chromium	$\mu\text{g}\cdot\text{l}^{-1}$	N	9.3	22.9	-	-
METALS-L	Copper	$\mu\text{g}\cdot\text{l}^{-1}$	N	7.0	5.0	-	-
METALS-L	Iron	$\mu\text{g}\cdot\text{l}^{-1}$	N	9.2	4,490	-	-
METALS-L	Lead	$\mu\text{g}\cdot\text{l}^{-1}$	N	5.6	<4.1	-	-
METALS-L	Magnesium	$\text{mg}\cdot\text{l}^{-1}$	N	<0.2	55.6	-	-
METALS-L	Manganese	$\mu\text{g}\cdot\text{l}^{-1}$	N	1.6	334	-	-
1450	Mercury	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<0.05	<0.05	-	-
METALS-L	Nickel	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.5	37.5	-	-
METALS-L	Potassium	$\text{mg}\cdot\text{l}^{-1}$	N	13.5	321	-	-
METALS-L	Sodium	$\text{mg}\cdot\text{l}^{-1}$	N	21.3	864	-	-
METALS-L	Zinc	$\mu\text{g}\cdot\text{l}^{-1}$	N	<1.1	10.3	-	-
INORG-L09	Alkalinity	$\text{mg}\cdot\text{l}^{-1}\text{ as CaCO}_3$	N	95.8	2,640	-	-
1450	Arsenic	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	1.5	1.7	-	-
1450	Selenium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	0.83	<0.50	-	-
1450	Antimony	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	2.2	3.9	-	-
1450	Tellurium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<1.0	<1.0	-	-
1450	Thallium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<1.0	<1.0	-	-
1450	Uranium	$\mu\text{g}\cdot\text{l}^{-1}$	S-N	<1.0	<1.0	-	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221017	011221018	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				30/11/21	30/11/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
ORG-L02	Naphthalene	µg.l ⁻¹	A	<0.05	10.1	-	-
ORG-L01	TPH	mg.l ⁻¹	N	<0.20	0.6	-	-
ORG-L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	-	-
ORG-L02	Phenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2-chlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	4-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2 nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4-dimethylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,6-dichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	4-chloro,3-methylphenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4,6-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,4,5-trichlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	Acenaphthylene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Acenaphthene	µg.l ⁻¹	A	<0.05	0.77	-	-
ORG-L02	4-nitrophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	Fluorene	µg.l ⁻¹	A	<0.05	0.25	-	-
ORG-L02	Pentachlorophenol	µg.l ⁻¹	N	<0.50	<0.50	-	-
ORG-L02	Phenanthrene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Anthracene	µg.l ⁻¹	A	<0.05	0.13	-	-
ORG-L02	Fluoranthene	µg.l ⁻¹	A	<0.05	0.35	-	-
ORG-L02	Pyrene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Benza(a)anthracene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Chrysene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Benzo(b)fluoranthene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Benzo(a)pyrene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Indeno(123-cd)pyrene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Dibenza(ah)anthracene	µg.l ⁻¹	A	<0.05	<0.05	-	-
ORG-L02	Benzo(ghi)perylene	µg.l ⁻¹	A	<0.05	<0.05	-	-

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Client: JPCE Ltd (SI Green)
FAO: Beth Jones

CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221017	011221018	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				30/11/21	30/11/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
1840	Alpha-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Beta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Gamma-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Delta-BHC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Heptachlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Aldrin	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Heptachlor Epoxide	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endosulphan	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	pp-DDE	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Dieidrin	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endosulphan-I	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	pp-DDD	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endrin Aldehyde	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endosulphan Sulphate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	pp-DDT	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Endrin Ketone	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1840	Methoxychlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Ametryn	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Atraton	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Atrazine	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Bromacil	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Butachlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Butylate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Chlorpropham	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Cycloate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Devrinon	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Diazinon	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Dichlorvos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Dimethyl-p	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Nitrophenylphosphate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Diphenamid	µg.l ⁻¹	S-N	<0.20	<0.20	-	-

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221017	011221018	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				30/11/21	30/11/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
1830	Disulfoton Sulfone	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	EPTC	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Metolachlor	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Metribuzin	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Mevinphos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	MGK	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Molinate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Pebulate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1830	Prometon	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Prometryne	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Propazine	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Prophos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Propyzamide	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Simazine	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Simetryn	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Terbacil	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Terbufos	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Terbutryne	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Tributylphosphoro-trithioite	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1820	Vernolate	µg.l ⁻¹	S-N	<0.20	<0.20	-	-
1730	Organotin (Total as TBTO)	µg.l ⁻¹	S-N	<0.050	<0.050	-	-
1760	Dichlorodifluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Chloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Vinyl Chloride	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	Bromomethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	Chloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Trichlorofluoromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Trans 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1-Dichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Cis 1,2-Dichloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221017	011221018	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				30/11/21	30/11/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
1760	Bromochloromethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	Trichloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1,1-Trichloroethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Tetrachloromethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,1-Dichloropropene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Benzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2-Dichloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Trichloroethene	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	1,2-Dichloropropane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Dibromomethane	µg.l ⁻¹	S-A	<10	<10	-	-
1760	Bromodichloromethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	cis-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	-	-
1760	Toluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Trans-1,3-Dichloropropene	µg.l ⁻¹	S-N	<10	<10	-	-
1760	1,1,2-Trichloroethane	µg.l ⁻¹	S-A	<10	<10	-	-
1760	Tetrachloroethene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,3-Dichloropropane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Dibromochloromethane	µg.l ⁻¹	S-A	<10	<10	-	-
1760	1,2-Dibromoethane	µg.l ⁻¹	S-A	<5	<5	-	-
1760	Chlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	1,1,1,2-Tetrachloroethane	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Ethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	m&p-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	o-Xylene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Styrene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Tribromomethane	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Isopropylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Bromobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2,3-Trichloropropane	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	N-Propylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	2-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				011221017	011221018	-	-
Client Sample Reference:				CWM LS02	L9B/09	-	-
Sample Date:				30/11/21	30/11/21	-	-
Sample Matrix:				Leachate	Leachate	-	-
1760	1,3,5-Trimethylbenzene	µg.l ⁻¹	S-A	<50	<50	-	-
1760	4-Chlorotoluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Tert-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2,4-Trimethylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Sec-butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,3-Dichlorobenzene	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1760	4-Isopropyltoluene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,4-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	N-Butylbenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2-Dichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2-Dibromo-3-Chloropropane	µg.l ⁻¹	S-A	<50	<50	-	-
1760	1,2,4-Trichlorobenzene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	Hexachlorobutadiene	µg.l ⁻¹	S-A	<1.0	<1.0	-	-
1760	1,2,3-Trichlorobenzene	µg.l ⁻¹	S-A	<2.0	<2.0	-	-
1760	Methyl Tert-Butyl Ether	µg.l ⁻¹	S-N	<1.0	<1.0	-	-
1815	PCB 28	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 52	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 90 + 101	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 118	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 153	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 138	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	PCB 180	µg.l ⁻¹	S-N	<0.010	<0.010	-	-
1815	Total PCBs (7 Congeners)	µg.l ⁻¹	S-N	<0.10	<0.10	-	-

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Total oxidised nitrogen in Discrete Analyser (In-house method)	INORG-L11	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of Speciated Phenols in water by GC-MS (In-house method)	ORG-L02	None
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None

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CERTIFICATE OF ANALYSIS 5264
Results of analysis of 18 samples received
on the 01/12/21

Report Date
25th January 2022

Analytical Method	Method Code	Accreditation Status
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025
Determination of VOCs in waters by GC-MS (Sub-Contracted method)	1760	None
Determination of PCBs in waters by GC-MS (Sub-Contracted method)	1815	None
Determination of fluoride in water by discrete analyser (In-house method)	INORG-L15	ISO 17025
Determination of Organochlorine Pesticides in Water by GC-MS (Sub-Contracted method)	1820, 1830, 1840	None
Determination of mecoprop in waters by GS-MS (In-house method)	ORG-L17	ISO 17025

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

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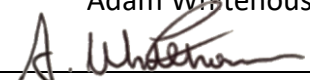
Tel: 01269 844558
Fax: 01269 841867
Email: info@decusuk.co.uk

Certificate of Analysis Number: 5326

Project/Site name:	SI Green	Samples Taken:	16-12-2021
Job Number:	-	Samples Received:	16-12-2021
Order Number:	Signed PAS	Date Instructed:	16-12-2021
Quotation Number:	DS 150606	Analysis Complete:	20-01-2022
Sample Matrix:	Surface Water	Report Issued:	25-01-2022
		Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature: 
Title: Laboratory Manager



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5326

Results of analysis of 1 sample received on
the 16/12/21

Report Date
25th January 2022

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				161221109	-	-	-
Client Sample Reference:				CWM SWMS 02	-	-	-
Sample Date:				16/12/21	-	-	-
Sample Matrix:				Surface Water	-	-	-
INORG-L01	pH	pH units	A	7.2	-	-	-
INORG-L02	Conductivity	$\mu\text{S.cm}^{-1}$	A	565	-	-	-
INORG-L12	Ammonia	$\text{mg.l}^{-1} \text{NH}_4$	A	0.70	-	-	-
INORG-L13	Chloride	mg.l^{-1}	A	38.2	-	-	-
INORG-L10	Suspended Solids	mg.l^{-1}	A	6.8	-	-	-
INORG-L08	Dissolved Oxygen	$\text{mg.l}^{-1} \text{O}_2$	A	6.5	-	-	-
INORG-L18	Total Organic Carbon	$\text{mg.l}^{-1} \text{C}$	A	44.5	-	-	-
INORG-L09	Alkalinity	$\text{mg.l}^{-1} \text{HCO}_3$	A	246	-	-	-
INORG-L11	TON	mg.l^{-1}	A	0.99	-	-	-
INORG-L31	Total Cyanide	mg.l^{-1}	N	<0.05	-	-	-
INORG-L20	Total Phenol	mg.l^{-1}	A	<0.01	-	-	-
ORG-L02	Naphthalene	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
ORG-L02	Pentachlorophenol	$\mu\text{g.l}^{-1}$	N	<0.05	-	-	-
METALS-L	Cadmium	$\mu\text{g.l}^{-1}$	S-N	<0.11	-	-	-
METALS-L	Nickel	$\mu\text{g.l}^{-1}$	A	<1.5	-	-	-
METALS-L	Calcium	mg.l^{-1}	A	74.7	-	-	-
METALS-L	Potassium	mg.l^{-1}	A	9.3	-	-	-
METALS-L	Magnesium	mg.l^{-1}	A	15.5	-	-	-
METALS-L	Manganese	$\mu\text{g.l}^{-1}$	A	1.5	-	-	-
METALS-L	Sulphate	mg.l^{-1}	A	50.9	-	-	-
METALS-L	Iron	$\mu\text{g.l}^{-1}$	A	27.9	-	-	-
METALS-L	Zinc	$\mu\text{g.l}^{-1}$	A	<1.1	-	-	-
METALS-L	Lead	$\mu\text{g.l}^{-1}$	A	<4.1	-	-	-
METALS-L	Chromium	$\mu\text{g.l}^{-1}$	A	<1.0	-	-	-
METALS-L	Copper	$\mu\text{g.l}^{-1}$	A	0.9	-	-	-
1450	Mercury	$\mu\text{g.l}^{-1}$	S-N	<0.05	-	-	-

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Tests marked 'N' do not hold UKAS accreditation

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Tests marked 'S - N' were sub-contracted to an approved laboratory without accreditation on the specific method

Any comments or interpretations are beyond the scope of UKAS accreditation



Client: SI Green
FAO: B. Jones

CERTIFICATE OF ANALYSIS 5326

Results of analysis of 1 sample received on
the 16/12/21

Report Date
25th January 2022

Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of Suspended Solids in water by gravimetric analysis dried at 105°C (In-house method)	INORG-L10	ISO 17025
Determination of Ammonia in water by colorimetric analysis (In-house method)	INORG-L12	ISO 17025
Determination of chloride in water by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in water by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals in water by ICP-MS (Sub-contracted method)	1450	None
Determination of TON by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of Alkalinity in water by discrete analyser (In-house method)	INORG-L09	ISO 17025
Determination of total organic carbon in water by colorimetric analysis (In-house method)	INORG-L18	ISO 17025
Determination of Dissolved Oxygen in water by titration (In-house method)	INORG-L08	ISO 17025
Determination of Conductivity in water by discrete analyser ECM unit (In-house method)	INORG-L02	ISO 17025
Determination of naphthalene in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Pentachlorophenol in water by GC-MS (Sub-contracted method)	ORG-L02	ISO 17025
Determination of Cyanide in water by discrete analyser (In-house method)	INORG-L31	None
Determination of total phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025

* Accreditation Status

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CERTIFICATE OF ANALYSIS 5326

Results of analysis of 1 sample received on
the 16/12/21

Report Date
25th January 2022

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

* Accreditation Status

Tests marked 'A' hold UKAS accreditation

Tests marked 'N' do not hold UKAS accreditation

Tests marked 'S - A' were sub-contracted to an approved laboratory with accreditation on the specific method

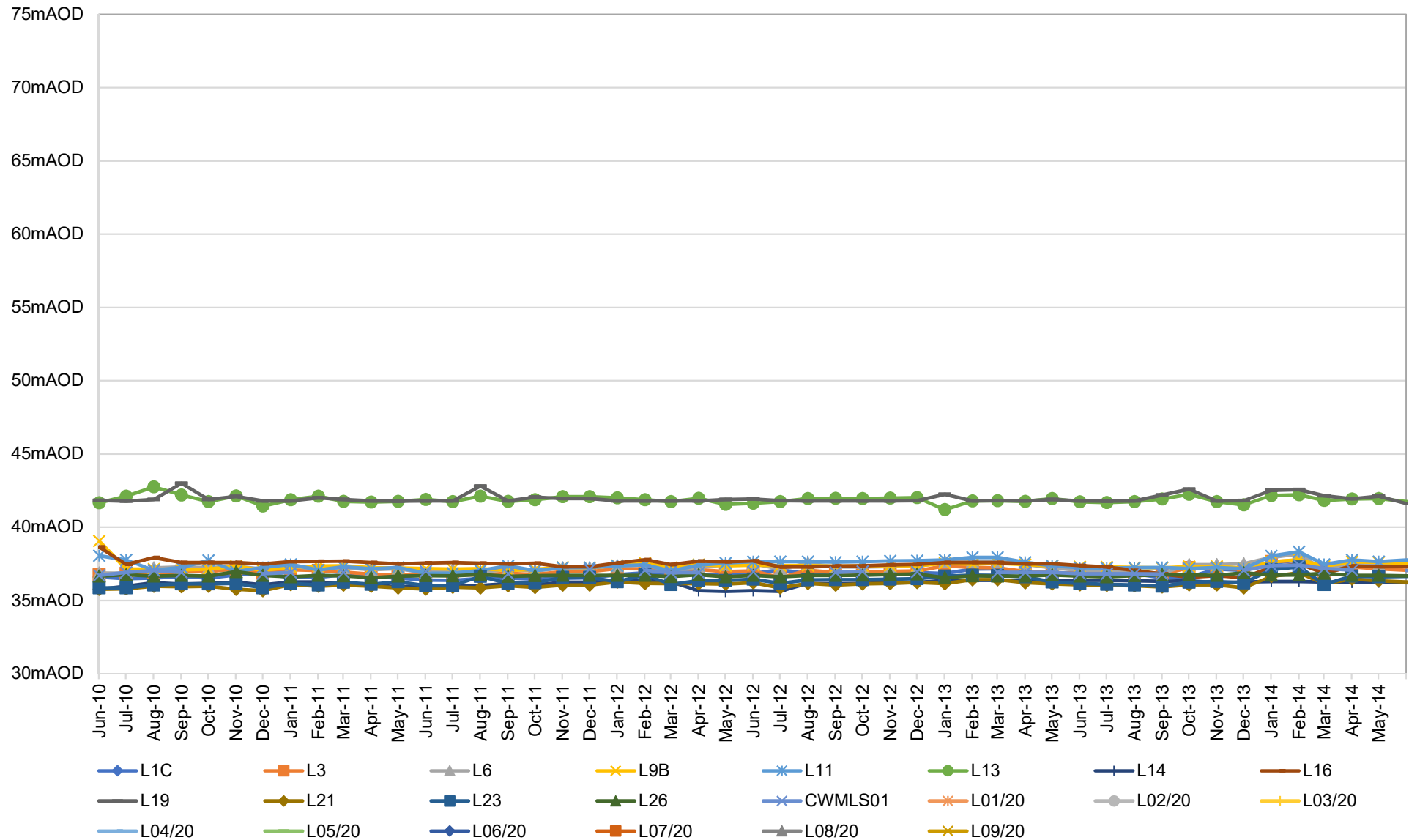
Tests marked 'S - N' were sub-contracted to an approved laboratory without accreditation on the specific method

Any comments or interpretations are beyond the scope of UKAS accreditation

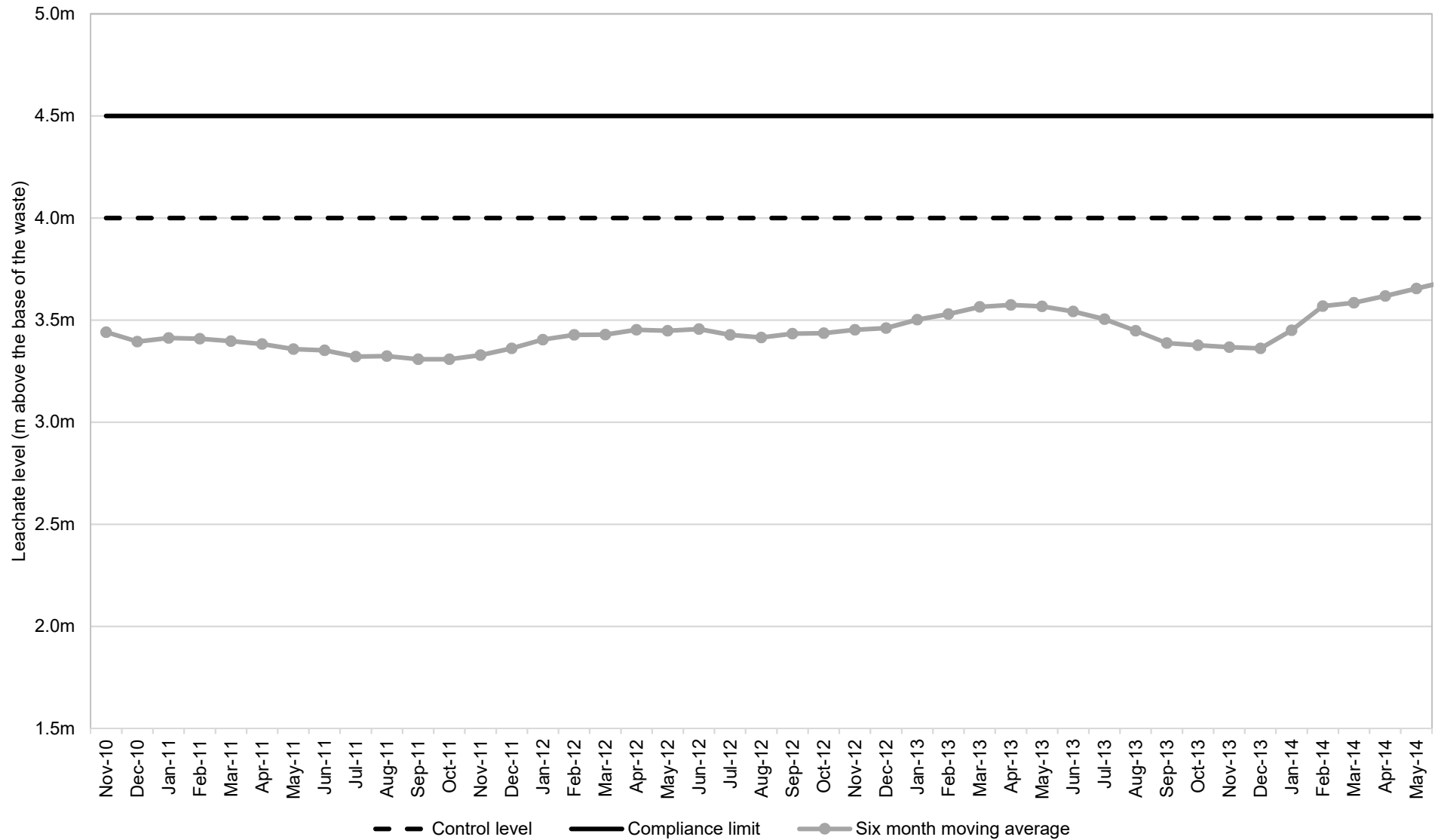


APPENDIX C
LEACHATE LEVEL GRAPHS

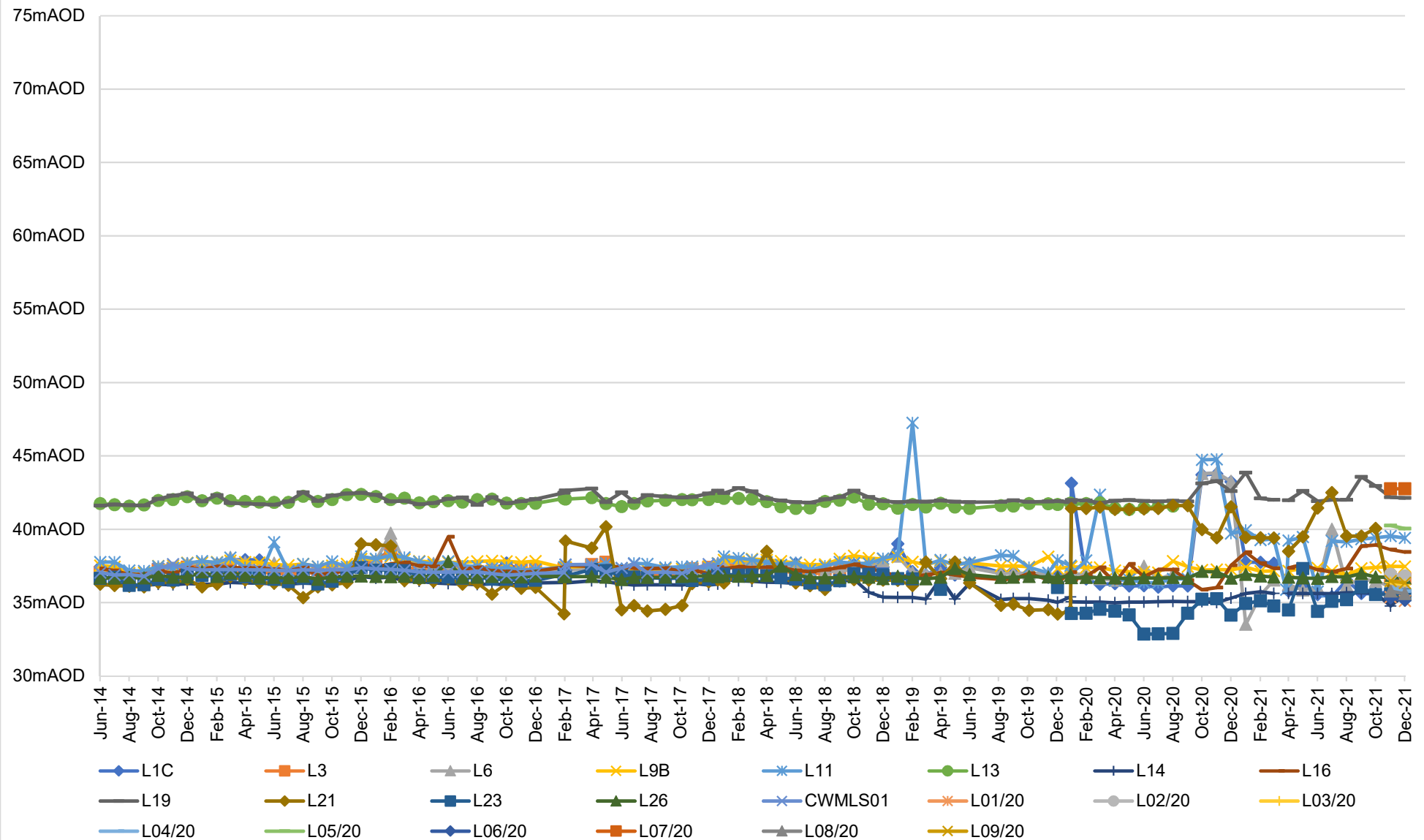
Leachate levels recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2010 and May 2014 including all data



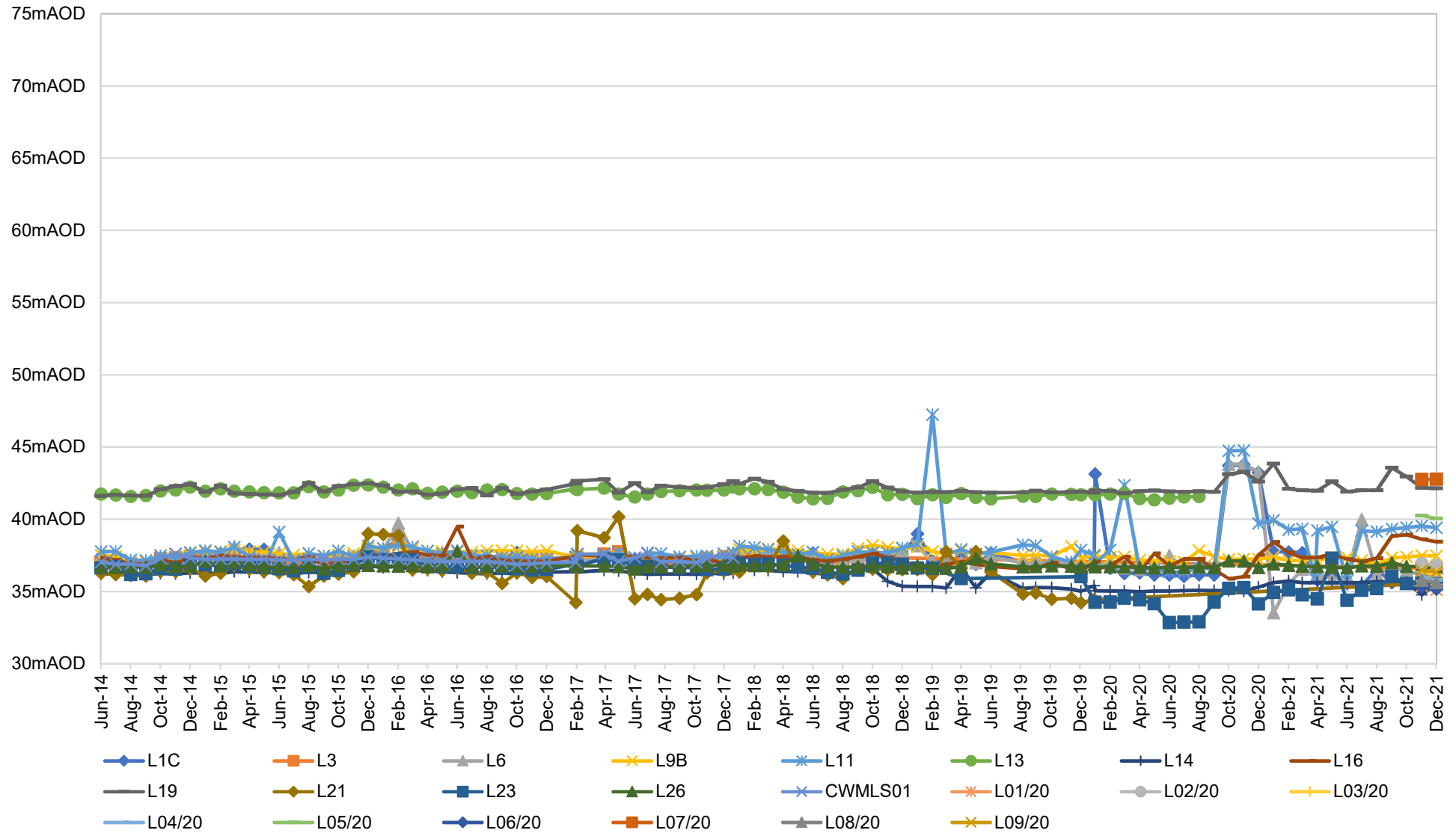
Six month moving average for the leachate level recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2010 to May 2014 (revised version of graph presented at Appendix HRA 2 of the 2014 HRA)



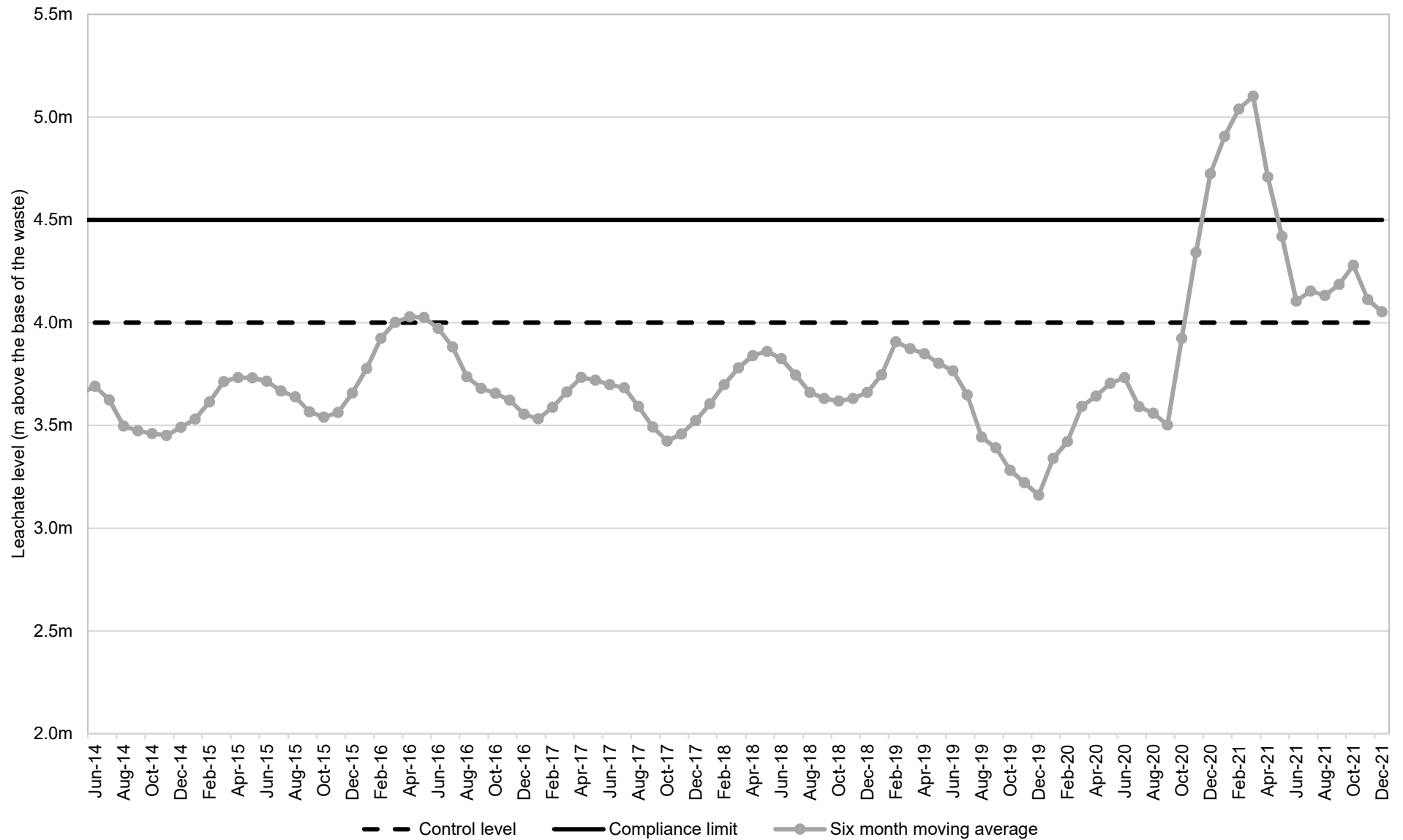
Leachate levels recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2021 including all data



Leachate levels recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2021 omitting spurious data for well L21 from January 2020 until the well was replaced in November 2021



Six month moving average for the leachate level recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2021 including all data



Six month moving average for the leachate level recorded in the leachate monitoring wells at Cwmrhydyceirw Quarry Landfill between June 2014 and December 2021 omitting spurious data for well L21 from January 2020 until the well was replaced in November 2021

